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A.P. SHARMA

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K. RAMNARAYAN

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1)	All courses of Kala -Bhavana	..	**June 23, 1995**
2)	M.A./M.Sc./M.Sc. (Ag.)/M.S.W., M.A./M.Sc. (Anthrop.)/M.A. (R.D.)	..	**July 3, 1995**
3)	B.A. (Hons.)/B.Sc. (Hons.)/ B.Sc. (Ag.) Hons./B.S.W. (Hons.)/ Diploma in Crafts	..	**21st July 1995 or 15th day from the date of publication of results of the Higher Secondary Examination of the W.B. Council of Higher Secondary Education of 1995 and Pre-Degree of Visva-Bharati of 1995, whichever is later.**
4)	Pre-Degree Course	..	**21st July 1995 or 21st day from the date of publication of results of Madhyamik Pariksha of the Board of Secondary Education, West Bengal and S.C. Examination of Visva-Bharati 1995, whichever is later.**

N.B. Visva-Bharati remains closed on Tuesday afternoon and Wednesday (weekly holiday).

REGISTRAR

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Editor :
SUTINDER SINGH

Can Teachers Inculcate Values?

A.P. Sharma*

Being a teacher and a teacher-educator for more than 38 years and having opportunity of teaching at school, college and university levels in India and abroad, I would never think that teachers cannot help inculcating values among their pupils. In fact teacher's impact on his pupils is colossal and quite lasting. Therefore, J.S. Rajput's views expressed in the *University News* of 27th March, 1995 that 'Trust the Teacher for Value Inculcation' are really praiseworthy. Rajput, in the capacity of the Chairperson of the National Council of Teacher Education, has the right to expect from teachers all the excellence in output as well as interaction which would develop knowledge and ethical values among students and create educative environment which could generate fraternity amongst fellow teachers and teacher-educators. His article is also a testimony to what has been happening in the teachers institutions as well as what is expected of the teachers.

Teachers like us who are sitting far behind in a crowded hall, have often reflected ideas on what qualities are expected of a good teacher?[1], what is the responsibility of a teacher in respect of his speech?[2], what is wrong with our education?[3], what should be the purpose of our education?[4], how to inculcate values among youth?[5], how to develop professionalism among teachers?[6], etc. But except generating a few ideas not much seems to have been gained out of that as the educational scenario today is so frustrating and disappointing. Therefore, Rajput's views though good, are likely to be lost in the din.

Enigmatic Scenario

Not only me but many other friends and teachers have been showing concern about the poor quality of teachers and a down-hill trend in the educational standards. Unpragmatic curriculum prevailing in our universities is another issue demanding attention. We often come across valuable articles in journals showing great concern and agony for the prevailing disorder and inadequacies in the educational arena. Rajput's views also unfold similar concern over educational problems and on what is expected of the educators in the teachers colleges. He states :

> "The fruits and gains are not getting distributed evenly. Those in the majority, and deprived, are trying hard to get included in the other category. Ends are considered more important than means. Concern for others gets diminished in the process. The objective is just to possess 'more' and acquire a greater status in the society. No section, including teachers can remain aloof from such overpowering trends." (*University News*, 27 March 95)

Directly or indirectly, Rajput, being self-convinced, points out his finger towards teachers, who too have joined the race with others to possess

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more and acquire status in society. But how to stop them, has not been expressed by him.

We know it well that teachers should have concern for their pupils and show love for them. It is also quite true that values cannot be inculcated by including a few chapters in the textbooks or by providing one or two periods for it per week in the time table. Schools, colleges and universities must undertake the responsibility to ensure imparting universal values of love and affection, without which much cannot be done in that direction. Therefore, none with a sane head would reckon Rajput's views in this respect as rhetoric! But the question arises whether schools, colleges and universities can do all that with teachers who do not possess those values?

Rajput's views in respect of teachers training colleges are immensely valuable. He reflects:

> "Talking of teachers and the multiplier effects of their 'work' one must immediately revert to the teacher training institutions. The number of teachers they produce has a direct relevance to the multiplier effect that is likely to be visible in the society." (*University News*, 27 March 95)

It is absolutely true that the role of the teacher-trainer has a direct impact on the pupil's personality and his disposition has a multiplier effect on the society. Therefore, the role of the teacher educator is of paramount importance. As such, the prevailing decadence in the society and teachers' failure to attain the right position, can be attributed, to a large extent, to teachers' colleges, for teacher-trainers have a multiplier effect on our society. Therefore, they are surely responsible for value erosion in the society. How can we expect teachers colleges to transcend the situation and prepare themselves to implement strategies with greater efforts, take initiative and possess foresight in order to create sufficient awareness and motivation, when they have fallen from the coveted norms? It would simply be a hypothetical proposition to expect from the teachers colleges and teacher-trainers something which they themselves don't possess. The total situation is very fluid.

Hypothetical Expectation

It has been a painful experience to work in the capacity of a principal and a professor in the established and reputed teachers colleges in the last 10 years after returning from abroad. It is purely a myth to reckon that teachers colleges could be the institutions where teacher educators are capable of making singular contribution provided they realise the depth and expanse of their role. Where regularity and availability of teachers in teachers colleges, during working hours, has become a rare phenomenon who would generate awareness and motivation amongst teachers? It is purely a hypothetical expectation that teacher-educators, administrators, and managers can be entrusted with the task of value inculcation when the administrators and the managers of aided teachers colleges, specially privately owned teachers colleges, are working day and night to convert their institutions into money minting institutions. It is an astonishing but shameful fact that privately owned teachers institutions don't have adequate infrastructure, libraries or qualified teachers and the managers of these institutions have no concern at all for the standards, facilities or salaries of teachers. This is an open secret that serious educational programmes such as 'practice-teaching' or 'block-teaching', which are the backbone of the entire teachers training programme, are conducted to fulfil university requirement only and not to develop professional or personal qualities.[7] How can teachers colleges provide fruitful interaction and develop familarity with the community when programmes like Open Air Campus or block teaching are not considered seriously and reduced to a formality, if not a farce.[8]

How I wish Rajput would visit such teachers colleges in the less developed states of the country and see the doleful conditions of teachers and students who don't get even drinking water in their institutions round the session. There are institutions where there are hardly any hostels, libraries or furniture for the students. Teachers are sometimes obliged by providing scanty and unhealthy accommodation. Their salaries, which are much less than the prescribed norms are paid irregularly. All that and much more is a normal practice of such institutions.

What would a teacher-trainer do even if he/she possessed the qualities? Perhaps, it is his/her own subsistence for which his/her first priority would go than to wrestle with inculcation of ethical or educational values, specially when the total environment around him/her is utterly polluted. Can we still leave the responsibility of developing values with the teacher-trainer who is almost helpless to improve his own lot? It seems to be an enigmatic situation to which hardly there would be any solutions. Let us think in that direction.

Possible Solutions

A ray of hope was generated among the teacher-trainers when it was heard that a National Council for Teacher Education had been created for the welfare of the teachers colleges and the teacher educators. But as the time passes, the hope is gradually dying and replaced by disappointment and agony. No one seems to be serious to take up the work which has been left undone for decades. How long would one leave an accidented person on the road when he has been bleeding profusely? Are there some possible remedies for the bleak situation? Perhaps, there may be.

Innovate the Admission Procedure

Identifying the reasons for the existing hard situation, can be taken as the first step towards the solution. But serious efforts are necessary to be made in that direction. Once, when I was visiting Williamettee University at Salem in Oregon State in USA during 1990, I took an opportunity to visit their Department of Education. On enquiry the Head of Department unfolded the selections procedure of teachers in that State. She told me that only those whose academic achievements from High School to University have been 'excellent' were selected through a Board for the teachers' job, provided the persons concerned possessed right aptitude and/or developed adequate attitude. She further told me that during the training programme, which was totally pragmatic and utilitarian, if a person showed disinclination, he/she was dropped from the training. The selection procedure at our place is not that strong. It is neither systematic nor reliable and to a large extent the pre-training-test, known as PTET at certain places, leads to a chance factor ending up in recruitment of those who possess neither right aptitude nor academic soundness. Can we not change our rotten, unpragmatic and outdated selection procedure with a better procedure through which academic excellence and proper aptitude would be taken into account?

Remove Political Interference

More steps are needed to be taken by the Department of Education both at the centre and in the states. We must devise ways to stop political interference in the educational institutions. What has the politician to do with the teachers' transfers unless there is a dire need for it? How can one trust the teacher to foster values when his own strings are pulled by others?

Punishment Helps

Sometimes punishment has a positive effect on those who repeatedly commit crimes. It is high time to punish those who fall short of the desired ideals. Fear, at times, works as a catalytic agent. Most of the driving rules are adhered to with the fear of punishment in foreign countries. Our various schools of philosophy teach us to forgive, but *Geeta* teaches us to punish those who are guilty of committing crime. Therefore, none should be spared for constantly breaking the rules or not discharging the duty.

Active Support from NCTE Chairperson

Let the NCTE Chairperson intervene soon in the matters of the sub-standard teachers colleges to arrest rapidly falling standard of education, lest the situation should reach the point of no return, which from now is not too far away. When some of these measures are taken, perhaps sooner than later time will come when we will surely trust the teachers.

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TO OUR READERS

Knowledgeable and perceptive as they are, our contributors must not necessarily be allowed to have the last word. It is for you, the readers, to join issues with them. Our columns are as much open to you as to our contributors. Your communications should, however, be brief and to the point.

Problems of Indian Higher Education

K. Ramnarayan*

The problems of Indian Higher Education, resulting from unplanned growth and expansion, will be discussed under :

1. Decline in standards of education
2. Disparities in higher education
3. Unemployment among the educated
4. Increased number of students in university campuses
5. Frustration among teachers and students.

The first problem of Indian higher education relates to the variable standards of various universities. With almost a "reckless" growth of various universities without proper control, there is no minimum standard or requirement insisted upon even though it may be on paper. Lack of funding, poor selection policy, unmotivated students, uninspiring teachers, politics in the campus, political interference, lack of commitment on the part of administrators, vagaries of the current examination system, corruption at various levels and inadequate monitoring are some of the major causes for fall in standards.

The growth of higher education in India shows evidence of unevenness and disparity. The enrolment of the scheduled castes and scheduled tribes is appallingly low, the latter as low as 0.3%. Even though more females appear to have enrolled in higher education, the male-female ratio is approximately 3:1. When one compares the enrolment of scheduled castes with others, scheduled tribes with others, males with females, rural and urban, developed and less developed, the disparities are striking.

In spite of the proliferation of educational institutions ostensibly to provide more job opportunities, the real problem has been the ever increasing member of educated unemployed. Education has been so closely linked to jobs that people flocked to universities to obtain some degrees, only to find that in spite of their degrees, suitable jobs are not easy to get. One often does not get a job commensurate with one's educational qualification. There appears to be a mismatch between the educational strategy and job availability.

The Indian academic profession had been under the influence of the British for so long that the tradition of servility and subservience has continued to plague the educational system. Bureaucratic functioning of academic bodies has stifled the growth of colleges. Decision making and autonomy have suffered as a result. The system of affiliation to a university, the western academic pattern and the caste segregation have suppressed the innovative trends in Indian higher education.

Many teachers have not chosen the academic profession by choice. For want of anything else to do or as a stop-gap arrangement, they have joined the academic profession. Further, alumni joining their alma-mater has created a sense of inbreeding and prevented the widening of horizons for these college teachers.

The managements of colleges are often composed of people with no educational background — often they are illiterate ! They are in the management because of their political clout and financial contributions; naturally these people cannot make sensible and positive decisions for the betterment of education. What is worse is that there is no involvement of the teachers in the decision making process. Decisions are handed down in a truly autocratic fashion and the teachers (the "think-tank" of society) are left wondering whether they can ever have any say in academic matters.

The sense of insecurity among teachers, especially the recently appointed ones, has an unsettling effect. Most teachers are confirmed in service about one or two years after appointment. During this probation the teacher runs the risk of being dismissed without a cause or terminated without reason. The probation period can be arbitrarily extended should the teacher not satisfy the 'bosses' entirely. The threatened atmosphere and the lack of motivation of these teachers vitiates the academic sanctity of the university campus life.

"Hygiene factors" such as salary, staff rooms, facilities and perquisites are woefully substandard in most educational institutions primarily because of inadequate funding. The administrators too have not realised the importance of these factors for an academic professional; consequently, there is very little

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The Indian Railways as a Model for In-Plant Training

B.V. Rama Rao*

When the Indian Railways ushered in the Industrial Revolution into India in 1853, it was a stupendous task to meet their needs for technical manpower with practical skills in a pre-industrial society. At that time there were very few Engineering schools in the country, and in the initial stages even Roorkee and Guindy offered only Diploma courses and it was only later on that they introduced B.E. courses. The first Indian Universities came into being only after 1857.

If the Mountain cannot go to Mohammed, Mohammed must go to the Mountain. It is easier to build an Engineering School into an existing large Railway Workshop than to add a workshop to an existing Engineering School or College. And that is what the Railways did.

The Special Class Apprentices Scheme

Thus the large Locomotive Workshops of the then East Indian Railway at Jamalpur became the Centre for training and developing Graduate Engineers to meet the needs of the Indian Railway System, on the principle of "Catch them young and imbue them with the Industrial Culture". This scheme of Special Class Apprentices has proved to be so successful that it continues to this day, 50% of the Class-I recruitment to the Indian Railway Service of Mechanical Engineers being through this stream, the balance 50% being through the IES Examination open to Engineering Graduates of the University System and to A.M.I.E. or equivalent candidates. However, in both the streams, the All-India Competitive Examinations are conducted by the Union Public Service Commission.

In the author's opinion, a similar scheme could be followed, on the pattern of the Indian Railways, by other major industries like Steel, Cement, and Textiles and by the Electricity Boards. While we talk of Industry-Institute interaction, the best interaction occurs when it is in-built and when the industry itself with its enormous facilities and resources and in-house R & D takes the responsibility for organising, owning, and running the educational centres required for meeting at least a part of its own manpower needs. In such a system we have in-plant training built into the educational scheme at the very conceptual stage itself. Such centres could also, on a contributing basis, meet the requirements of in-plant training for other sister industries which are less monolithic and more dispersed, e.g., the automobile industry.

In addition to the Special Class Apprentices Scheme, the Indian Railways have apprenticeship schemes at many levels for meeting their technical manpower requirements, and all of them have in-plant training as their core. Every Railway Workshop, whether for Locomotives, Coaches, and Wagons, for Bridges, or for Signalling and Telecommunications, or for Traction Motors, has a Basic Training School as a built-in organ of the Workshop for training artisans, shop supervisors, and foremen at various levels.

Sandwich Courses

The main problem of in-plant training is to devise time slots of adequate duration in which the student can get an adequate chunk of this training hands-on, without unduly prolonging the total duration of the course. Moreover, the injections of in-plant training have to be interspersed with the relevant preparatory theoretical inputs. For instance, an in-plant training on the timing chain and valve adjustments in an automobile has to be preceded as a pre-requisite by theoretical training on the relevant cycles of the Internal Combustion Engine. The best way to do this interspersing is by a Sandwich Pattern as is the case in the United Kingdom. This however will require a revamping of our syllabi and curricula as well as the examination schema and their intervals, as the present schema are heavily theory-oriented with very little practical content, with the result that a Graduate in Mechanical Engineering does not know how to repair his own moped or scooter, barring exceptions.

MOUs for Industry-Institute Interaction

With nearly 300 Engineering Colleges and about 500 Polytechnics in the country, it is not possible to arrange for in-plant training by individual requests from time to time. It is necessary for Industry to accept its share of responsibility and enter into Memoranda of Understanding (MOUs) for In-plant Training as well as other forms of Industry-Institute interaction

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including Testing, Consultancy, R & D, Training, and Continuing Education Programmes tailored to the specific needs of participating Industries. MOUs could be facilitated by organisations like CII (Confederation of Indian Industries) and VIA (Vidarbha Industries Association). Instead of each Engineering College making its own efforts, all the Engg. Colleges and Polytechnics in a Region, for example all of them in the area covered by Nagpur University, could come together and enter into MOUs with large organisations like Railways, Coal India, SAIL, BHEL, NTPC.

Evaluation and Weightage in the Curricula

It has been the experience that In-plant Training will not be taken seriously by the trainees unless (a) it includes systematic testing and evaluation of the skills and knowledge acquired, (b) adequate marks are allotted for this component of the total scheme, and (c) passing the prescribed tests in in-plant training is made mandatory for promotion to the next higher module of the Course. The ILO has developed an elaborate system of Skill Modules in various areas of technology.

Time-Slotting and Training Content

In USA and Europe the academic programme in a year is covered in 8 1/2 months and the remaining 3 1/2 months of the year are available for summer jobs and industrial training. In the majority of the Indian institutions, the summer recess is only 1 to 1 1/2 months while the academic teaching period proper comes only to around 20 working weeks and the University Examinations for Summer and Winter are together spread over an unduly long period of 3 months. The examination slots have to be abridged to one month per year so as to provide slots for In-Plant Training. Alternatively, as for medical courses, the course duration has to be extended from 4 years to 4 1/2 years. It will also be necessary for Expert Committees with representatives of Industry and Academia to work out detailed schedules for In-Plant training in different areas of technology. Here again the Indian Railways have much to offer as a working model, since they have evolved such courses with In-plant Training at their core in combination with theoretical inputs over a long period of many years, and modified them from time to time with the introduction of diesel traction and electrification.

Problems of Indian Higher Education

(*Contd. from page 4*)

interaction among the teachers themselves and also between teachers and students.

Very few incentives are given for scholarship and research and a teacher's interest in these areas gradually evaporates. The overworked teacher has no time for research or additional reading. The primary function of a teacher appears to be delivering lectures to large classes. Many teachers perfunctorily go through this exercise during their teaching career. The attitude of the students further depresses the teachers. Most students are interested only in attendance and passing examinations; many do not have fluency in English. Creativity, both on the part of the teacher and the student is frowned upon. Students are obsessed with note-taking and the creative teacher who disregards accepted practices and tries to swim against the current, soon finds himself ostracised.

Student unrest has, in its own way, complicated the already turbulent scene in an educational campus. A threatening academic atmosphere with the lurking fear of university examination and internal assessment, perceived feeling of injustice, disregard and disrespect for authority have contributed to student unrest. Political interference in academic matters, student wing of political organizations, political flavour in campus elections for student bodies and lack of enough model teachers have made the students restive. Students view education as a means and not as an end, compelled as they are by parental pressures and social responsibilities, they are not motivated enough. They look for opportunities to 'let out their steam.' The college campus, which enjoys some immunity and seclusion, is the outlet for in-built pressures. They are influenced by political ideologies, easily convinced by emotional appeals and swayed by disgruntled politicians. The genuinely interested students, out of fear, passively accept the happenings as part of the educational process. These students develop an aversion for the academic atmosphere and naturally go to other professions.

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INFORMATION TEACHING SKILLS
Planning and Design

Abdul Rashid*

Introduction

The need and demand for information is something no modern society can evade. The complexities of the modern world pose a great challenge to facilities for the production and dissemination of information. It is for this reason that libraries and information centres occupy a unique position for all sections of a society. Decision-making of any kind is dependent on, and is the product of information in the various formats in which it is contained.

The clientele of the academic institutions are not always familiar with information sources. The challenge facing libraries and information work is how to make the users understand services so that they are able to utilise them. Readers must be made aware of the library, its services, the different information sources and how to use them. One important task of the librarians is, therefore, to make sure that the library is used in the most profitable manner possible.

Acquisition and storage of material is not beneficial if no effective use is made of them. It is, therefore, up to the library staff to give guidance to users so that services are fully utilised. Users must be educated so that they are in a position to manipulate information sources to suit their information needs. The concept of "information teaching skills" (ITS) will, therefore, be used in this work to denote all activities to do with the familiarisation of users with the objective of encouraging independent learning.

Information Teaching Skills (ITS) has only recently come into common use, which denotes a wider range of skills than is described by the term User Education, which deals mainly with instructions in library use and the use of information sources. Drodge and Morgan (1984) also say that ITS reveal some broadening of library orientation and bibliographic instructions programmes to include other areas of information skills.

Thus, a broader definition of ITS should include :

1. Library skills;
2. study skills needed to handle information, such as analysing, synthesising, selecting, rejecting, evaluating and communicating information to others; and
3. the additional skills needed for independent study, such as planning and prioritising.

Activities Necessary for ITS

Before discussing planning and design, it is necessary to shed light on the activities, which are necessary for choosing and implementing of such a programme.

I. *Funds*

Money is the pivot around which the whole administration revolves. Therefore, the sponsoring organisation should be persuaded and educated about the importance of such a programme. The higher authorities should be impressed that it is only through this programme that the institution can fulfil its aims and objectives. In fact, the organisational authorities must be motivated to allocate more and more funds for the accomplishment of such a programme. Cowley (1979) says that it is foolish to start such a task, when resources and facilities are not sufficient to support teaching programmes. For the time being, if additional funding and staff time are not available, these should be taken out of other areas of the service.

II. *Cooperation*

The programme cannot be developed without the active support of administrative staff and particularly of academic staff. If they are not co-operative, the programme will fail because their cooperation is required to encourage students to attend the course, to provide information about the curriculum so that library use instructions is relevant to the students work and to provide time table space for the course. McCarthy (1985) says that the problem with obtaining such cooperation is that the lecturers rarely understand the vastness of the information available in the library or that their students have difficulty in access-

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ing it. Their own bibliographical skills may be poor, but they often have less need to use the library than do students.

III. *Library Facilities*

The library must have adequate borrowing and opening hours. One of the important tasks of ITS programmes should be to try to make the library a pleasant and attractive place, straightforward and easy to use. For this purpose, it must have good lighting and ventilation, proper arrangement of heating and air conditioning, etc. As far as possible, the library should be located at the centre of the organisation so that all the users have an easy access to it. Services like translation, reprographic, binding, etc should be made available within the library. Similarly, SDI (Selective Dissemination Service) and CAS (Current Awareness Service) should be introduced. Last but no means least, a rich and balanced collection is an important requisite. Without an effective access to library early materials as well as of late material, effective library teaching is not possible. When the programme proves to be successful, there is likely to be a reduction in the number of simple enquiries and an increase in sophisticated search requests. Therefore, the use of bibliographic tools and request for inter library loans are also likely to increase.

IV. *User Needs and Information Seeking Behaviour*

The user is the key person in any library and information system. All the luxuries of information revolution and problems of information explosion are centred round the user and his convenience. Therefore, as Prasher (1993) writes, understanding the user is half the battle in providing information services as the success of any information system depends considerably on how best the system design is based on close and accurate understanding of the user. Thus, information system is not concerned with just demand, it has to stretch its hands to know the information needs, the motives and purpose of gathering information, ways and means of gathering information and the user attitudes and practices in relation to information. Hoadley and Clark (1972) write that a library can achieve its goals if the library is more precise about who its readers are. This precision coupled with more research into behaviour of information gathering patterns of these user groups, will assist the library more effectively in developing the programme and using its resources and limited funds to achieve desired goals.

It is also important for an information scientist to know: who among the potential users make use of the library and information services, what services are being used, what is the frequency of their use and for what purpose these services are being used? Equally important for the librarians is to know as how the non-user can be converted into regular users. Still more important for them to know is how far their library fits into the total system of information communication. Thus, for planning or maximising the impact of their services, it is necessary to find out about the users and their information requirements as also their habits.

Planning and Design

Planning and design is not only necessary, it is an important part of the whole programme from its initial stages through its implementation to its evaluation. Therefore, it is advisable to plan the programme systematically, pinpointing its aims and objectives, as it will give the programme a purpose, structure and coherence. An ill conceived programme generally fails and that is a wasted expenditure of time. It is said that wise are those, who learn by the experience of others. Therefore, the experience and expertise of others available must be fully utilised. The result of this planning should be tested in a practical situation and evaluation should be carried out in order to assess the effectiveness of the programme. The development of a course of education is described in figure 1.

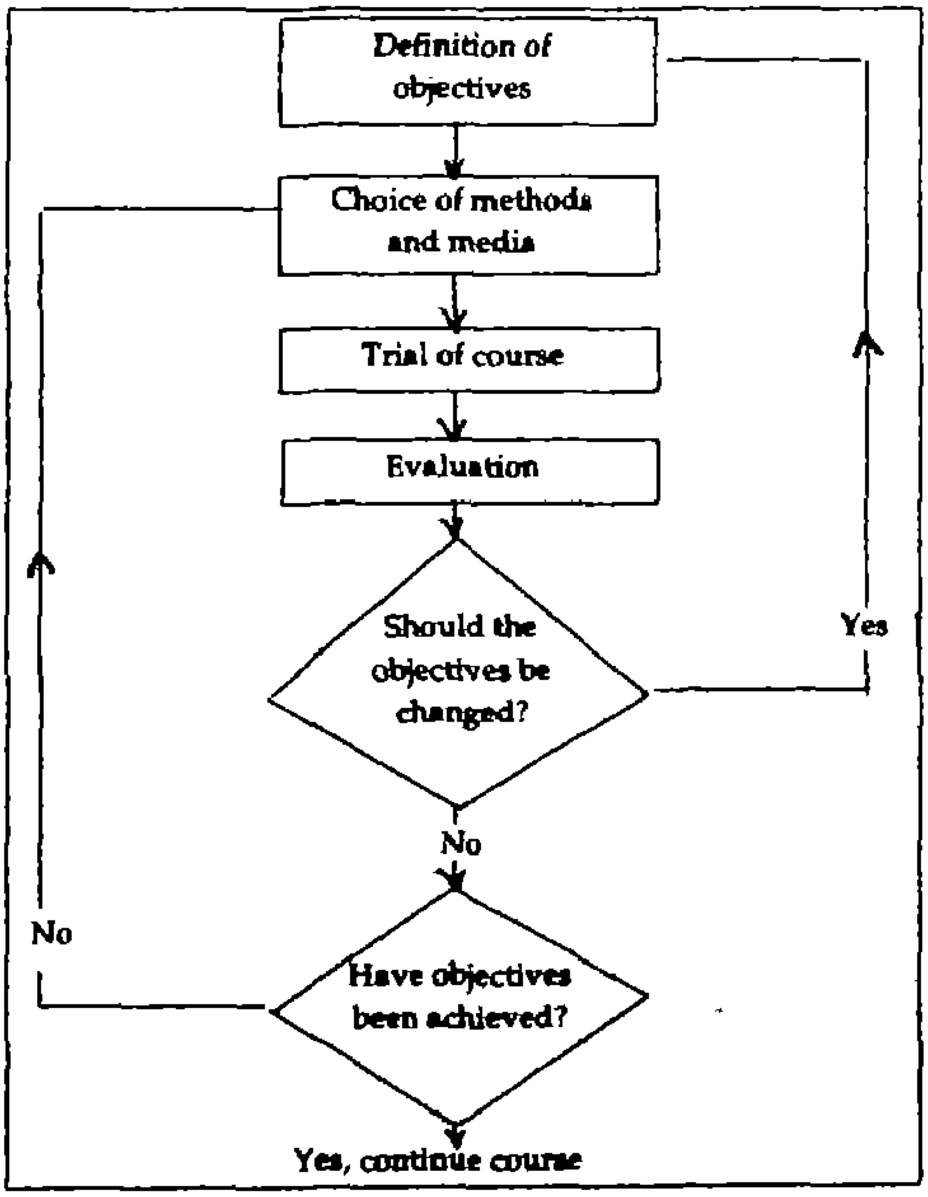
Definition of objectives
Choice of methods and media
Trial of course
Evaluation
Should the objectives be changed?
Yes
No
No
Have objectives been achieved?
Yes, continue course

Figure 1. Flow chart of an Information Teaching Skills (ITS) Programme

Definition of Objectives

This should form first stage in planning the course as the choice of the contents and methods of instruction will be based on these objectives and they will also provide a focal point for evaluation.

In the process of determining the objectives, several steps should be identified.

- Overall objectives of the programme should be compatible with the overall goals of the institution and its library;
- Availability of adequate funds; and
- Information needs and information seeking behaviour of the target group, etc.

Some determining objectives will differ from one type of institution to another and from school students to research scholars, as per their social, lingual and cultural backgrounds, information needs, information seeking behaviour it will be unreasonable to prescribe a general set of objectives for these institutions. Keeping these facts in view, a separate list of objectives is given, which may provide guidelines in determining these objectives for their respective institutions :

School Libraries

An example of general objectives for school library education is given by Crowford and Chun (1964), which are :

1. creating a love of books and reading,
2. integrating the library in the school programme so that the work of the classroom is enriched and made increasingly vital,
3. equipping the students with an understanding of the use of books as tools,
4. aiding the students in building attributes of good citizenship through the use of library, and
5. developing the responsibility and good work habit through library services contributed by the students.

College Libraries

A model of objectives for bibliographic instructions for college libraries is given by ACRL Bibliographic Task Force (1975), which are

1. the student recognises the library as a primary source of recorded information,
2. the student recognises the library staff particularly the reference staff, as a source of information and in information seeking assistance from staff members,
3. the student is familiar with or has knowledge of the library resources that are available to him, and
4. the student can make effective use of the library resources available to him.

University Libraries

The main goal of ITS at the university level according to Fjallbrant (1977) are :

1. the ability to apply the principles of scientific communication to problems of information retrieval;
2. the ability to use the various tools available in the university library (and other libraries) in order to obtain information useful in connection with studies and later works, as and when required, and
3. a sense of devotion.

General

UNISIST (1977) identifies the following educational and institutional objectives :

1. to enable the individual to do immediately after the instruction, tasks that they could not do well, if at all prior to instruction;

2. to secure change in behaviour or attitude resulting from instruction; and

3. to secure an embodiment of the skills as fairly permanent feature of work.

All the above are worthy and commendable but one thing to remember is that the aims and objectives must be formulated after a thorough discussion with the students and the academic staff and must be framed keeping in view the environment, political, social and economic conditions of each region of India and above all, as per the needs and demands of the students, staff, time and curriculum.

Therefore, on his experience and study, the author would like to include an additional group, which may also help in formulating the objectives. Here, it may be mentioned that the term 'goal' is defined as broad, general statement of purpose, whereas 'objective' is defined as specific short term aims, in agreement with the main goals.

Goals

1. to provide a basis for continuation of self-education;
2. to develop initiative and independence;
3. to ensure that academic community can exploit library resources adequately and to their own satisfaction;
4. to create an awareness of the existence of relevant sources of information, the techniques required to locate the sources by literature searching;
5. to recognise problems associated with literature searching;
6. to develop efficient information retrieval techniques;
7. to improve the ability of students to read critically and think logically and creatively;
8. to improve academic performance of students;
9. to improve study, learning, library and communication skills of students; and
10. to develop confidence in information sources as aids to problem solving.

Objectives

- to enable students to find information on their chosen topics easily and comprehensively;
- to teach students about the information sources relevant to their disciplines and of inter-disciplinary nature;
- to introduce them to the literature of their subject, and give students practical experience of using the literature;
- to teach them techniques of information retrieval both manual and non-line;
- to enable students to find particular items using catalogues, indexes, abstracts, bibliographies etc;
- to introduce students to the library and make them aware of facilities provided and services offered in the library;
- to enable students to use the library and other information sources more effectively both during their course and in their later career; and
- to give a wide range of information skills, knowledge of bibliographic tools printed and on-line and original sources.

Target Groups, Timing and Teaching Place

Different target groups have different needs and ability to appreciate the significance of material. To have a high motive on the course, a very suitable arrangement of time table, course contents for different target groups is necessary.

It is generally suggested that library orientation and library tour should be designed for new users at the beginning of the first term. But I have observed that at the beginning of a course, students' minds are more concerned with adjusting to their new surroundings than their needs to understand the library for later studies. Therefore, it is important that the courses are run when the students are motivated to learn i.e., when they can perceive that they have a need to use the library's resources.

The session of teaching information retrieval skills should be designed to provide for the third year undergraduates in the second term or the fourth year, undergraduates in the first term, and postgraduates. Why are they suitable for the session of teaching information retrieval skills? That is because students in the third or fourth year and postgraduates have reached certain level in their special knowledge. They need to do a lot of literature searching at this stage. Therefore, at this time, they will be highly motivated and interested in the lesson. The session of teaching communication skills should be designed to offer to postgraduates only, because postgraduates have more experience and are more mature than undergraduates, but their needs are at a higher level, communication skills associated with the practice of their profession is essential for their research and advanced study.

With regard to the population of students in different sessions, on the course, considering limited number of resources and teaching staff in the library, a large group of 100-150 students from different departments in the university should be arranged to take part in lectures, group of 10-15 students are appointed to library tours and practical sessions. Postgraduates should be arranged to join in lectures in a large group as well and small groups of 5-10 for practical sessions. If there are only a small number of postgraduates in the university, they can do practical work individually.

Continuity is also an important aspect of library use course. Why? Change is the law of nature and the library as an institution has always remained on such wheels, which has, is and will have to accept the challenging forces of our complex and ever changing society. Therefore, the course contents, aims and objectives of such programme will also remain constantly changing with the changing needs of our society. Therefore, students should be motivated and interest and attention should be created in them to know and should be imparted more and more knowledge about the latest developments on an on-going basis.

All lectures on the course should be arranged to take place in one of the lecture rooms in the institution; the practical work, tutorials, demonstrations, etc. should be done in the library itself.

Teaching Staff

There is controversy as to who should impart this training-the library staff, the teaching staff or the tutor-librarian. As already mentioned, it is said that the library staff cannot teach information skills as they have no teaching experience and they remain over busy in providing professional library services. That is why, Malley (1982) and others suggest that such a task should be accomplished by a tutor-librarian because he is recognised as a teacher both by the students and the teaching community and this will increase the status of such a programme as the tutor-librarians is sure to have a sound knowledge of the needs of the curriculum and information needs of the users. I agree in toto with Malley but this does not mean that the librarian should remain a silent spectator. Such a programme will succeed by a joint efforts on the part of the librarian and the library-tutor.

At the initial stage, it is recommended that where the tutor-librarians are not as yet available, such a task should be initiated by the library personnel with the co-operation of the academic staff. In this context, the library personnel should possess the qualifications and qualities, which have already been mentioned. In addition, they should have experience of research and appropriate subject qualifications. In most of the Western libraries, such a task is also accomplished by the subject librarians, who as their designation indicates are also subject experts in addition to their professional qualifications.

Course Contents

Once the users needs have been ascertained and the aims and objectives settled, then the course contents should be determined. Kirk (1971), Mews (1972) and others have formulated course contents for ITS, which should be taken into consideration while designing the course contents but Malley (1984) has given the following comprehensive course contents:-

1. *Retrieving Information*
    - i. sources of information
    - ii. search strategy
    - iii. using indexes
    - iv. using abstracts
2. *Evaluating the Information*
    - i. selecting information
    - ii. evaluating information
3. *Organising the Information*
    - i. note taking
    - ii. personally storing information
4. *Communicating the Information*
    - i. dissertation writing
    - ii. writing abstracts
    - iii. preparing bibliographic references.

The course contents should be designed as per the latest developments in ITS field and should be continually improved as also their teaching methods. The state of the libraries in India is not the same as that of the European libraries. In view of this, the course contents should be, as already hinted, in accordance with our needs and there should not be unnecessary copying of foreign courses, which are designed to meet their needs and not ours. However, in deciding on the contents of a course of instruction, it will be useful to consider three types of skills that students will need to use a library effectively. These are cognitive, effective psychomotor skills. Cognitive skills are to do with facts and rules about, for example, how to use the library catalogue or an abstracting journal. Affective skills are concerned with the understanding of how information is communicated and being confident in the use of library resources. Psychomotor skills involve physical activity such as the operation of the key board of an on-line catalogue. The objective, in fact, should be to teach the necessary skills of all types.

At the initial stage, following contents especially for postgraduates are recommended :

Library Orientation

The orientation programme should be a fairly short programme, introducing the students and newly recruited staff to the library, its structure, layout, services and library facilities available, rules and regulations and so on in the form of a lecture, followed by a short tour round the library. They should also be introduced to the library staff.

Information Retrieval and Communication Skills

Session I: Introduction

- objective of this course
- sources of information
- the importance of information and communication skills

Session II: Structure of Literature

- primary and secondary sources
- indexing and abstracting like subject, keyword, author index, etc.

Session III: Literature Searching

- basic methodology
- development of search techniques
- how to use different kinds of indexes, abstracts giving examples and handouts
- how to record the results of a search
- current awareness and retrospective searching, etc.

Practical Work

The personnel involved in teaching should arrange various kinds of practical work in the use of different sources, abstracts and indexes and on-line or C D ROM searching of literature available on different specific topics, according to different course subject in the institution. The best method of assessing practical work is to evaluate the quality of information retrieval work supporting an identified piece of course work or project.

Session IV : The Information Network

- computer based information retrieval systems
- sources of information and literature (different databases) etc.

Session V: Communication

- principles of communication
- channels of communication
- information organisation, for example, how to do references
- information evaluation
- writing a report
- study skills.

Methods of Instruction

The instructional method chosen will depend on a number of factors including the extent of instructions required, the number of students, financial resources, staff time available and subject content. When deciding on a particular method, it is important to consider the various factors affecting the learning process and how each of these factors will be affected by the method or media chosen. The factors to be considered include motivation, degree of activity required of the student, ease of understanding, feedback on progress, auditory and visual stimuli, opportunity to control the role, the rate of flow of instruction, teacher-student interaction and student-student interaction. The degree of importance of each of these factors will vary from learning situation to learning situation. Therefore, no one method or medium will be suitable for every student in every situation. Thus, it will be most effective to use a variety of media and methods within one course of instruction. Whatever method/s is/are chosen, evaluation is there to determine the effectiveness of that method/s.

Library Orientation

Teaching method used in the library orientation on the course should be lectures followed by the library tours. If possible, it may be helpful to use the audio-visual materials like audio cassettes, tape slide presentation, filmstrips, videos, etc to enhance the value of lectures and seminars. Similarly, an alternative form of tour may be the self-guided tour in which students follow a printed guide. It has the advantage of being self-paced, allows active participation on the part of the student, and can be undertaken whenever convenient. Also, individual help in information and enquiry desk may aid the library orientation programme.

Teaching Information Retrieval and Communication Skills

Teaching methods applied in teaching information retrieval and communication skills will mainly be formal lectures and practical work. If possible, seminars, tutorials and demonstration for on-line searching are appropriate for integration both between staff and students and between students themselves and applicable to provide motivation and to see that students are actively involved, say in a practical exercise during which they receive feedback to their progress. The assessment method used on the course is to write a report of how to use different manual tools to do literature searching including search strategies, search methods and results, etc, which should be marked by the teaching staff.

Information Technology

Rashid (1993) writes that in today's world of *double digit inflation, computers especially micros are* the product for which the prices have been falling steadily while the computing power has been rising sharply. Therefore, computer assisted learning can be used to replace other forms of instruction. Fjallbrant (1990) has considered the application of information technology for ITS at several levels—undergraduates, postgraduates, research staff and continuing education. Emphasis is on library catalogues, bibliographic databases, video text, optical information storage, electronic publishing and electronic mail.

Hutchings (1990) and Hammond (1990) describe the potential, the hardware and software requirements, and the benefits of two contrasting delivery methods which operate on different machines: hypertext on an Apple Macintosh, and interactive video on a BBC Model B or IBM or compatible. Each system uses computer-assisted learning material which can be written and developed in-house by librarians with limited computing skill since neither requires any prior knowledge of sophisticated programming techniques. Particular emphasis is placed upon educational aims, objectives and benefits which can be achieved. These two delivery methods offer particular benefits for library orientation programme, where they can also help alleviate the logistics problems of dealing with large number of students concentrated into a short space of time. Their applications can also be extended to encompass more advanced courses covering for example, search strategies or specific information sources.

Even off-the-shelf and turnkey systems provide computer assisted instructions for teaching information storage and retrieval system in the form of what is referred to as 'help system'. It is a facility provided by these packages, which enable a user to obtain information on certain aspects of the packages during operation. These are the facilities pertaining to any system designed to be used without expensive training and which seek to assist the user to gain maximum benefits from the system.

The menu system displays a list of available functions for selection by the user. This is accompanied by a list of options and details of the keys to be pressed for the selection of options. Thus, the user needs no specific training or influence manual or a printed guide normally used in manual ITS programme in library and information systems. These instructional facilities can be described as 'user friendly' and user education on-line on electronic programmes. I personally feel that librarians may find that integrating computer based instructions into their ITS programmes will also capture such users, who might not otherwise be interested in learning to use the library more effectively. In fact, the widespread use of micro-computers in Indian Libraries will result in librarians using the computer not only to teach on-line searching but also as an aid to learning in all areas of ITS in the very near future.

Evaluation Methods

The evaluation stage of the development of an ITS programme is very important. Downword (1992) while quoting Fjallbrant says that the role of evaluation is to provide information that can be used for educational decision-making. If it is not carried out, errors in the planning stage are unlikely to be detected or an originally good programme may fail to change and develop in response to changing curriculum requirements and user needs. Also, if we are unable to show any evidence of positive results form our user education programmes, the investment in staff time and money is likely to be questioned.

As can be seen in the flow chart in figure I, there are two aspects of an evaluation — have the objectives been achieved? and, is the programme a good one or should objectives be changed? Frick (1990) has stressed the importance of a qualitative evaluation exercise, which should ask such questions as

- Are students implementing what they learn?
- Is the programme cost effective?
- Will the evaluation improve the programme?
- What is the student experience of the programme?

Therefore, the evaluation methods, which should be used on the courses are :

1. Questionnaires before the course begins and after the course finishes.
2. Interview after the course completion to get some feedback.
3. Achievement scores of course work as a part of evaluation of the result of the course teaching.

The first two methods will test how much the students enjoyed the programme, how much of it they have remembered and whether they now feel more confident in using the library. Training will also greatly affect the results of this sort of survey. If students are asked about the programme directly after having taken part in it, information may be gained about clarity and whether the material was new to them. To find out whether the programme was correctly timed and relevant to their needs, this survey must be carried out at a later date. Similarly, a pre-survey will make students more aware of what they do not know and so they may pay more attention to those points during the course or just subconsciously note the answers to questions that had bedevilled them in the survey. Thus, both kinds of surveys should be ideally conducted. These two methods, however, do not provide any information on whether the students are now more competent in library use. But this can be achieved by employing the above mentioned method. Moreover, informal discussion with the users observing of day to day library use and noting the type of enquiries received can be used to evaluate the effect of an ITS programme.

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CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/ Officer to be contacted
June 26-30, 1995	ICDE's International Conference for Distance Education	Theme : One World Many Voices — Quality in Open and Distance Learning	UK Open University, Birmingham	Mr. Alison Forsyth, Conference Planning Manager, ICDE, Conference Office, The Open University, 66-68 High Street, Harbone, Birmingham, B 17 9 NB, UK.
July 8-14, 1995	IX World Congress of the World Council of Comparative Education	Theme : Education for the Twenty First Century : Cultural Traditions and Educational Modernisation	The China Comparative Education Society and the China National Institute of Educational Research	Secretary, National Institute of Educational Research, Bei-San-Huan-Zhonglu, 46, Beijing 100088, China

Indelible Language of History

Shri Madhavrao Scindia, Hon'ble Minister for Human Resource Development, Govt. of India, delivered the Convocation Address at the 13th convocation of the School of Planning and Architecture, New Delhi. He said, "Planning and architecture are noble professions. Apart from being functional, they are also the creative expressions of economic development, the socio-political system, technological achievement and the cultural values of the society of the time. It is the indelible language of history of a civilisation. India is proud of its architectural heritage. The world looks at it with wonder and awe. It is our responsibility to preserve this heritage and create works of art of which our future generations could be proud." Excerpts

The issue of resources for education has become a central one in the era of economic liberalisation. The Kothari Commission on Education of the 1960s and practically all those who are concerned with education have stressed that the egalitarian goals and the practical, development oriented objectives of Indian society can be realised only by making investment in education of an order commensurate with the nature and dimensions of the tasks. While the investment in education as a proportion of the G.D.P. has gone up from 1.2 per cent in the 1950s to 3.7 per cent in the 1990s, it is still below the norm of 6 per cent stated in the National Policy on Education. The deleterious consequences of inadequate investment in education are indeed very serious. The Policy envisages a number of measures for augmenting resources for education.

While the state is fully resolved and committed to continue its effort towards a higher allocation of funds for education, the task is daunting. Almost half of our population does not enjoy access to even basic education. It would greatly help therefore, if the efforts of the Government could be supplemented by the efforts of NGOs and Institutions themselves to generate resources. The concept of participation of and partnership with industry and individuals in the promotion of higher professional education on a sustained basis needs to be seriously debated and explored. But it has to be a constructive partnership to create better quality education. Care should be taken to ensure that there is no commercialisation of education, no obstacles to merit-based admissions, no deterioration in academic standards and no encroachment on institutional autonomy.

The cost effective utilization of resources in equally, if not more, important as augmentation of funds. As the Programme of Action of 1992 observes, I quote:

> *an ethos of cost effectiveness and accountability should permeate every part of the education system. To say the least, unplanned proliferation of sub-standard institutions should stop here and now; programme should cease to be driven by budgets and instead should stress processes and outcomes; efficiency should be rated not by the ability to consume budget and demand more but by performance and delivery.* Unquote.

The government recognises the importance of higher, particularly professional education, in the newly emerging global economy. It will be the endeavour of the government to support and promote higher professional education in a planned manner.

A major concern of the National Policy on Education is that of reconciling individual and personal goals of economic betterment of the graduates, with the national goals of equity and social justice. The National Policy on Education 1992 has very clearly defined the importance of higher education and I quote :

> *Higher education provides people with an opportunity to reflect on the critical social, economic, cultural, moral and spiritual issues facing humanity. It contributes to national development through dissemination of specialised knowledge and skills. It is, therefore, crucial for survival.* Unquote.

The stated objectives of India's education policy are thus two-fold. Education must impart knowledge, skills and values to the individual, and, at the same time it should become an instrument of social change. The situation today is that whereas for many skilled and vocation oriented job positions qualified persons are not available, there are millions who have acquired university degrees but cannot get jobs. This has to be reversed by making curricula practical and job oriented.

The world is experiencing cataclysmic changes. The revolution in Information Technology is shrinking the world into a single entity with consequent impacts and changes in the values and culture of people. India cannot remain aloof from this process of change. Our economic policy has changed from public sector dominance to a market orientation, the agrarian economy is giving place to secondary and tertiary sectors and the human settlement pattern is becoming more urbanised. The urban economy is buoyant and the stockpile of food grains has crossed the figure of 30 million tons. People have begun to look towards the future with hope.

However, there is also the feeling that the benefits of the new deal have not reached the poor and the deprived. The recent 74th Constitutional Amendment Act for the municipalities, and the 73rd Amendment Act for the panchayats, should create windows of opportunities for people to participate fully in developmental activities of towns and villages. The goal of real local-self-government is now within the realms of possibility and Government is making all the needed efforts to see that the process of development is brought closer to the people so that people make developmental decisions for themselves through their local bodies.

These Constitutional Amendment Acts have immense implications for town planners and architects. These Acts provide for creation of District Planning Committees and Metropolitan Area Committees which will be required to integrate sectoral plans within the framework of a spatial plan. That is where the professional expertise offered by the graduates in planning and architecture will very much be required.

However, the education and training imparted to the students have to be re-oriented towards practical and sustainable approaches of problem-solving. Let me illustrate this by a simple example. Maslow identified in his hierarchy many years ago—food, clothing and shelter as the most basic of the human needs. Shelter is one of these three needs you are uniquely qualified to provide. The estimate of requirements of new or upgraded housing stock in our country as we approach the new millennium, is as high as 50 million units. This cannot be tackled by the conventional steel and concrete structures that architects are trained to design. A wholesale changeover to low cost, and low energy, low capital, labour intensive, simple technologies are the only way in which such staggering numbers can even begin to be addressed. Are you being trained to evolve such techniques?

So also with Planning. No development can be made sustainable economically, environmentally, or ecologically unless it addresses the basic needs of people. We are beginning to re-discover this after four decades of effort on creation of infrastructure and industries, nuclear technology and communications. All these are means, the end of development has to be the betterment of the human condition of all 900 million of our population especially the 40 per cent who continue to live below the poverty line. Unless this is achieved Planning and the National effort would be meaningless.

Architecture and planning are noble professions. Apart from being functional, they are also the creative expressions of economic development, the socio-political system, technological achievement and the cultural values of the society of the time. It is the indelible language of history of a civilisation. India is proud of its architectural heritage. The world looks at it with wonder and awe. It is our responsibility to preserve this heritage and create works of art of which our future generations could be proud.

In this context, the efforts of the Railway Ministry in the creation of model railway stations in each Railway Division, utilising both the materials and idiom of highly developed and refined local architecture, come to mind. Such efforts were also launched by the Civil Aviation Ministry in the creation of 12 model airports throughout the country. These too reflect and celebrate local traditions that we can be justifiably proud of. A unique feature of these projects has been the emphasis on durable materials so that not just initial costs, but the costs and difficulties of maintenance during the life of the building are also taken into account. This is very important but largely overlooked in our drive for short term economy.

You have the unique opportunity of writing the pages of history of your era, society and the country for the coming generations to read, understand and emulate. Strive for excellence in your work. Do not allow mediocre copying of western styles and methods without reference to context, tradition and use, to corrode and blunt your talents and abilities. A synthesis between creativity and practicality based on our traditions and tailored to our needs is what is required.

CAMPUS NEWS

S & T Entrepreneurship Park

Bangalore University, it is reported, will soon have an exclusive science and technology entrepreneurship park (STEP) aimed at interacting with industries and financial institutions to promote entrepreneurship among students.

The project involves selecting students with an entrepreneurial bent of mind and exposing them to a development programme so that they can set up their own industries in course of time. With the State Government giving its nod, the project which was first mooted by Vice-Chancellor Dr. N.R. Shetty over a year ago will now be set up on a 10 acre plot at Jnana Bharati campus.

The students will be assisted in identifying projects and preparing feasibility reports. The project also involves construction of industrial sheds to enable testing of prototypes, besides providing expert guidance. "All assistance will be extended to enable student-entrepreneurs gain confidence and set up their own industries after a period of time," it was stated.

The park will have a library containing product catalogue, national and international standards, product information and so on. Information regarding establishing industries, Government laws, financial assistance available from various agencies will also be provided.

STEP will comprise a permanent exhibition hall where industries will exhibit products and components which facilitate import substitution. A meeting hall will be constructed to help mutual interaction between buyers and sellers while training activities will be held in the seminar hall.

STEP will also afford facilities for computer-aided design including solid modelling.

Electronics-Industrial Applications

The Regional Engineering College, Kurukshetra, in collaboration with the Electronics Science Department of Kurukshetra University organised an All India Seminar on "Electronics-Industrial Application". The seminar was organised as part of the platinum jubilee celebrations of the Institution of Engineers (India).

Speaking on the occasion Professor K.L. Johar, Pro-Vice-Chancellor, Kurukshetra University, lauded the role of All India Council for Technical Education for introducing professional courses in various technical institutions of the country. These efforts, he said, would go a long way in generating employment for the talented youth of the country. He stressed that alongwith increase in manufacturing of products its quality must also be improved and sustained so as to compete with the commodities of multi-national companies.

Dr. Johar observed that there was a need of improvement of work culture so that we could able to face the challenges prevailing these days. He called upon every citizen to work with dedication and Government must also play its role in extending all facilities required for the development of electronics commodities.

He, however, regretted that today every profession was weighed with monetary aspects and the noble services of teachers, engineers, doctors and lawyers had also been affected with this evil. "We must retain our old ethic, glory and credibility of these noble professions", he asserted.

Dr. O.N. Kaul, Principal Regional Engineering College, Kurukshetra (RECK) in his address pointed out that the RECK was the leading institute in imparting education in the field of Electronics Industrial Applications.

Professor J.P. Gupta, Member Secretary, AICTE, in his keynote address, revealed that the efforts were being made in expanding the technical education in the field of electronics and computer.

According to Dr. R.S. Khandpur, Director, CEDT, the emerging trends in the field of medical electronics will be helpful in saving the mankind from pain.

Dr. S.B. Bhalla, Chairman of the Institution of Engineers (India) (IEI), Local Centre Karnal, highlighted the activities of the IEI and said that IEI was doing a great service to the aspirant youth in attaining equivalent engineering degrees. Dr. R.K. Arora, Chairman of Electrical Department described that RECK was self sufficient to produce engineers well equipped with Electronics for Industrial Applications.

CD-ROM on LAN

The Central Library of the Indian Institute of Technology, Madras has recently installed a CD-ROM System on a Local Area Network (LAN) using Novell Netware Ver. 3.11 consisting of a PC-AT486 file server connected to a CD-ROM tower having 8 high speed internal drives. Three disk-less workstations of PC-AT-386 computers are connected to the system and are kept in an air-conditioned Periodicals reading hall for the users to access the CD-ROM Databases.

Currently the Library subscribes to two CD-ROM Databases, namely, INSPEC (Science Abstracts) containing abstracts from thousands of journals, conference proceedings, books, technical reports and dissertations, covering all aspects of Physics, Electrical Engineering, Electronics, Computers and Information Technology from 1989 onwards; and Compendex + (Engineering Index) containing abstracts from 4,500 journals, technical reports, books, conference proceedings, covering Aerospace Engg., Applied Physics, Chemical Engg., Civil Engg., Environmental sciences, Control Engg., Electronics, Energy technology, Industrial Engg. & Management, Optics, Marine/Ocean Engg., Mechanical Engg., Automotive/Transport Engg., Mining & Metallurgical Engg., and Materials Science.

The advantages of the present system is that it allows multiple users to access all the CD-ROM discs simultaneously from any workstation. The users are permitted to download the selected records on to floppy diskettes on the workstation. Due to networking, the retrieval speed too has improved significantly and the users now find the service very effective and efficient. The library intends to add more CD-ROM Databases pertaining to Applied Sciences and Engineering in future.

Pondicherry Varsity Convocation

The Union Human Resource Development Minister Mr. Madhavrao Scindia said in Madras recently that the government planned to evolve an action plan to bring about changes in employment policy with the primary aim of ensuring that the graduates passing out of higher education institutions were employable. He was addressing the graduands of the Pondicherry Central University at the sixth annual convocation in the University's auditorium. He said it was time that industrial sector played its crucial role in research and development areas as it was absolutely necessary to have a bridge between industry and higher education institutions in the country. "We should also promote the ability of the youth" the Minister said. The fact that the Central Government had sincerely felt the inevitable need to push up investment in education was evidenced in the proposal to raise investment in education from 3.5 per cent of the GNP to six per cent.

Mr. Scindia said education would be accorded the highest priority and with economic liberalisation paving the way for the country to be a world leader in industry, agriculture and other sectors, the government had now come to lay greater emphasis on universalisation of education with emphasis on female children's education, and vocationalisation of secondary education. The emphasis was on employment and the future of the youth would engage the attention of the Centre.

The country had made rapid strides from a moribund state with massive poverty, low productivity, low technology etc at the time of the Independence. With a view to enlarging the success of the nation in the various sectors made possible by the economic policy a multi-pronged approach was being pursued to develop science and technology, create enlightened personnel for management of resources, and creation of institutions with relation to learning with background of Indian conditions.

Dr. A Gnanam, Vice-Chancellor of University of Pondicherry welcomed and presented a report.

Mr D. Jayavarthanavelu, an industrialist from Coimbatore, was conferred the degree of Doctor of Letters (Honoris Causa) by the Minister at the convocation.

Marketing Library & Information Products & Services

A Management Development Programme (MDP) on Marketing of Library & Information Products & Services (MLIPS) was recently conducted by the Indian Institute of Management, Lucknow (IIML). 13 senior level Library and Information Managers (LIMs) from all over the country attended the programme which was inaugurated by Dr. J.L. Batra, Director, IIML.

The topics discussed at the programme included (i) Conceptual Framework of Marketing; (ii) Marketing Mix; (iii) Marketing in Library & Information Context; (iv) Marketing Cases in the Service Sector; and (v) Building Quality.

The participants provided the feedback on the programme, with the help of a structured questionnaire designed for the purpose as well as through a report presented in the valedictory function.

Painting Competition

The Heart Care Foundation, New Delhi, in collaboration with Delhi Government and Bharatiya Kala Sangam Trust, Jabalpur (M.P), invites artists to participate in a painting competition specially organized for developing (i) awareness of causes & prevention of Heart ailment; and (ii) awareness for AIDS.

Only 2 paintings of max. size 2 ½ x 3 ft on the above themes will be accepted. The age limit for contestants is restricted to 35 years. The paintings participating in the exhibition will be considered to be donated to Heart Care Foundation of India and the amount gathered by sale of these paintings will be utilized for awareness against AIDS and Heart ailments.

There will be three awards — 1st prize: Rs 11,000/-, 2nd prize: Rs 5,000/-, and 3rd prize: Rs 1,000 each (for five winners on each theme mentioned above).

The competitions will be held on October 28-November 5, 1995 at the Perfect Health Mela 1995, Jawaharlal Nehru Stadium Grounds, New Delhi. The last date for receipt of entries is 30th September 1995. Entries may be sent to Heart Care Foundation of India, D-50 Defence Colony, New Delhi-110 024.

Ph.D in Devotional Literature

Osmania University proposes to start Ph.D courses in Devotional Literature at the Research Foundation for Devotional Literary Studies, Tulasi Bhavan, Osmania University Campus from the ensuing academic year. Candidates from all departments under the Faculty of Arts will be eligible for admission. The topics of research will be restricted to those related to devotional literature.

According to foundation Secretary and Director Prof R K Pandey the foundation feels that for a complete study of the Bhakti movement, the study of devotional literature in various languages is essential. To study the problems depicted in devotional poetry, scholars of subjects like philosophy, ancient Indian history, culture and archaeology might help in proper study of the devotional movement, he said.

Rati Memorial Scholarship in Journalism

The Indian Institute of Mass Communication has instituted a scholarship of Rs 500 a month, to be given every year to a woman trainee of the postgraduate diploma course in language journalism. To be called the Rati Memorial Scholarship, it is named after a young Hindi journalist Rati Agarwal, a former student of IIMC, who died in February this year.

The Union Minister for Information and Broadcasting Mr. K.P Singh Deo today received a cheque of Rs 51,000 from Rati Agarwal's father, Mr. Kirti Agarwal, a journalist and founder faculty member of the TV journalism course at IIMC. The contribution has come from her savings.

Mr. Singh Deo said the scholarship would help aspiring journalists in language journalism.

PG Course in Journalism

The Guru Nanak Dev University is reported to have decided to introduce a postgraduate course in journalism and mass communication at University College, Jalandhar, from the 1995-96 academic session.

The University Academic Council has already accorded its sanction to start the course.

We Congratulate ....

(1) Dr Snehalata S Deshmukh, who has been appointed the Vice Chancellor of University of Bombay.

(2) Dr Uttam Bhoite, who has been appointed Vice Chancellor of the Yashwantrao Chavan Maharashtra Open University, Nashik.

News from Agricultural Universities

Haryana Horticultural Officers Workshop

Dr. S. Arya, Vice-Chancellor, Chaudhary Charan Singh Haryana Agricultural University (CCS-HAU) stressed the need of quicker transfer of technology to the farmers to make agricultural production a continuing process. He said that in the changed scenario electronic media with its latest proliferation in villages could prove to be a boon for the development of agriculture. He was inaugurating a three-day Horticultural Officers' Workshop at the University recently.

The Vice-Chancellor said that as most of the farmers were illiterate or semi-illiterate electronic media in comparison to print media could be more effective in educating the farmers about the latest agricultural technologies. He urged the policy planners, administrators, officials of agriculture, print and electronic media to make concerted efforts in this direction and implement suitable policies.

Referring to the importance of fruits and vegetable preservation, Dr. Arya said that if we had to meet the demand of the ever increasing population and make our way to the international market, work on the development of high yielding varieties of these crops and their post-harvest technologies should be augmented. He called upon the University experts and officials of the State Department of Horticulture to accelerate their joint efforts and review the successes at a joint platform at regular intervals.

Dr. M.D. Asthana, Financial Commissioner & Secretary, Agriculture, Haryana, who presided, urged the researchers to make their researches need-based and develop relevant strategies whose implementation might enhance the production. He applauded the research and extension support provided by CCSHAU.

Dr. H.C. Sharma, Director of Research, CCSHAU in his report, disclosed that the State and Central Variety Release Committees had recommended the University's six high yielding and disease resistant varieties of vegetables and spices for general cultivation. Dr. Sharma said that efforts were afoot to meet the farmers' demand for improved seeds.

Over 200 participants from the State Department of Horticulture, agro-based industries and the University scientists attended the workshop.

Advanced Studies Centre for TNAU

The Indian Council of Agricultural Research is reported to have sanctioned a centre of Advanced Studies in the Tamilnadu Agricultural University. This was revealed by Dr. S. Sankaran, Vice-Chancellor, who said that the ICAR had sanctioned Rs. 41.25 lakhs for the establishment of this centre which would, among other things, offer training to extension workers and subject matter specialists of the Departments of Agriculture in Tamilnadu and the neighbouring States in the production of bio-control agents, handling of pesticides and usage, beekeeping, management of forest pests and insects of public health importance, storage pest management and training of entrepreneurs in agro based industries.

Research Project for KAU

The National Bank for Agriculture and Rural Development (NABARD) is reported to have sanctioned a research project for the Kerala Agricultural University on "Bio-conversion technology to augment nutrient utilisation of agro-industrial byproducts for ruminants".

The project is to find ways to use seed cake and coir and tea waste.

Agriculture in Israel

Dr. K.C. Bishnoi, Director, Project-cum-Plan Formulation (DPPF) of Chaudhary Charan Singh Haryana Agricultural University (CCSHAU) who visited Israel recently to participate in the International Course on "Planning, Management and Extension of Agricultural Projects and Enterprises" said, on his return to University, that agriculture in Israel was mainly mechanised and the irrigation system was totally computerised. Israeli irrigation system mainly consisted of drip and sprinkler system and thirty per cent of irrigation water was obtained from sewage water. Fertilizers were also applied through irrigation system and solar energy was efficiently utilised in agricultural operations through hot houses.

Indian agriculture could be improved and made still more remunerative if agricultural technological advances of Israel were adopted here as they were pertinent in our climatic conditions as well, Dr. Bishnoi said while delivering a seminar on his experience of 1 ½ months visit to Israel.

Narrating his experience of his visit to Israel Dr. Bishnoi said that cultivable land being mere 1.1 million acres, that also mostly rocky and sandy, Israel was exporting vegetables worth about 665.7 million dollars per year.

During his visit, Dr. Bishnoi studied methodology of Project Planning, Principles of cooperation and types of agricultural cooperatives, satellite farming, methods and principles of agricultural extension, community development and economics of agricultural production and resource allocation.

Speaking on the occasion Dr. S. Arya, Vice-Chancellor, urged the scientists to develop their technologies on the pattern of Israel so that farmers of Haryana could adopt commercial farming and the state could export still in higher quantity fruits, vegetables, flowers and related products.

Summer Institutes for 1995

The Indian Council of Agricultural Research (ICAR) proposes to hold Summer Institutes/Short

Courses in the field of Agricultural Sciences during ensuing Summer Vacation for the benefit of teachers, research workers and extension workers, particularly the subject matter specialists. The main objectives of this inservice training course would be to communicate the latest technologies advances in the subject and provide the necessary orientation to teachers and research workers of Agriculture/Agricultural Engineering/Animal Sciences/Fisheries so that they are able to relate the teaching of their subject to the problem in their respective disciplines.

Further details and application forms may be obtained from the Directors of the Summer Institutes.

S. No.	Topic of Summer Institute	Director of Summer Institute	Venue	Tentative Date
1.	Integrated Nutrient Management in Intensive Cropping Systems	Dr. P.C. Gupta Prof. & Head	Centre of Advanced Studies, Deptt. of Agronomy, G.B. Pant Univ. of Agril. & Technology, Pantnagar.	1.6.95 to 21.6.95
2.	Modelling of Technologies for Controlled Atmosphere Storage Systems for Fruits & Vegetables	Prof. B.P.N. Singh	Centre of Advanced Studies in Post Harvest Technology G.B. Pant Univ. of Agril. & Tech., Pantnagar.	June, July 1995 (20 days)
3.	Advances in Electron Microscopic, Immunological and Bio-chemical techniques of Plant and Bacterial Virus Detection	Dr. G.S. Shekhwat Director	Division of Plant Pathology, Central Potato Research Instt., Shimla	1.6.95 to 20.6.95
4.	Sustainable Hill Agriculture	Dr. Prakash Kar Thakur, Head of the Division	ICAR Research Complex for NEH Region, Barapani, Shillong, Meghalaya	11.7.95 to 31.7.95
5.	Breeding and Seed Production of Temperate Vegetable Crops	Dr. P.P. Sharma Prof. & Head	Dr. Y.S. Parmar Univ. of Hort. & Forestry, Nauni, Solan, 173230 (H.P.)	5.6.95 to 25.6.95
6.	Advanced Techniques and Teaching Methodologies in Animal Breeding	Dr. A.S. Kanaujia, Prof. & Head	Deptt. of Animal Breeding Haryana Agril. University, Hissar.	19.6.95 to 8.7.95
7.	Advances in Abdominal and nusculoskeletal *disorders with special* reference to Ultrasonography	Dr. Sureshwar Nath Sharma, *Prof. & Head*	Deptt. of Vety. Surgery and Radiology, Punjab Agril, Univ. *Ludhiana.*	11.9.95 to 30.995
8.	Biotechnological methods to augments fertility and fecundity in Farm Animals	Dr. K. Nachimuthu, Prof. & Head	Deptt. of Animal Biotechnology, Madras Vety. College Tamil Nadu Vety. & Animal Science University, Madras.	10.7.95 to 30.7.95
9.	Recent Advances on the Epidemology and Diagnosis of Zoonotic Diseases	Dr. R. Manickam, Prof. & Head	Deptt. of Preventive Medicine, Madras Vety. College, Madras -7	19.6.95 to 11.7.95
10.	Bioprocessing of Feeds and Crops Residues to Improve their Nutritive Values	Dr. D.D. Sharma, Principal Scientist	Dairy Cattle Nutrition Div., National Dairy Research Instt., Karnal	1.6.95 to 20.6.95

11.	Advances in Mycotoxicosis	Dr. A. Rajan Dean	Centre of Excellence in Pathology College of Vety. & Animal Science, Kerala Agril. University, Mannuthy.	3.7.95 to 22.7.95
12.	Recent Advances in Marine Fish Stock Assessment Methods and Models.	M. Srinath, Scientist	Central Marine Fisheries Res. Instt., Dr. Salim Ali Road, P.B.No. 1603, Cochin-682104.	12.6.95 to 1.7.95
13.	Technology for Dryland Horticulture in Arid and Semi-arid Area	Dr. (Prof.) S.N. Kaulgud	Central Campus, Mahatma Phule Krishi Vidyapeeth Rahuri-413722	1.7.95 to 11.7.95
14.	Production Technology for Flower Crops of Commercial Interest	Dr. Brijendra Singh, Head	Division of Floriculture & Landscaping, I.A.R.I., New Delhi.	19.6.95 to 28.6.95
15.	Maternal and Child Nutrition	Dr. (Mrs.) Rama K. Naik, Assoc. Professor	College of Rural Home Science, University of Agril. Science, Dharwad.	5.6.95 to 15.6.95
16.	Recent Advances in Bioconversion and Feed Utilization in Ruminants	Dr. S.P.S. Bedi, Principal Scientist	Centre of Advanced Studies, Animal Nutrition Division, Indian Vety. Research Instt., Izatnagar.	13.6.95 to 22.6.95
17.	Recent Advances in Freshwater Aquaculture	Dr. S. Ayyappan, Sr. Scientist	Central Instt. of Fresh-Water Aquaculture, Kausalaganga, Bhubaneswar- 751002 Orissa.	13.6.95 to 22.6.95
18.	Recent Approaches in the Management of Crop Pests and Beneficial Insects	Dr. J.N. Khound, Prof.	Deptt. of Entomology, Assam Agril. University, Jorhat-13.	27.6.95 to 6.7.95
19.	Diaphragmatic Herniorrhaphy in Bovines	Dr. D.Krishnamurthy, Sr. Scientist	Deptt. of Surgery & Radiology, College of Veterinary Sciences, CCS Haryana Agril. University, Hissar-125 004.	14.6.95 to 23.6.95

News from UGC

Countrywide Classroom Programme

Between 22nd May to 31st May, 1995, the following schedule of telecast on higher education through INSAT-ID under the auspices of the University Grants Commission will be observed. The Programme is presented in two sets of one hour duration each every day from 6.00 a.m. to 7.00 a.m. and 1.00 p.m. to 2.00 p.m. The programme is available on the TV Network throughout the country.

1st Transmission

6.00 a.m. to 7. a.m.

23.5.95

"Ware House - An Introduction"

"Stories in Stone"

"Acupuncture - Part III : On Pins and Needles"

25.5.95

"Basics of Polarography"

"Education through Art : Knowledge is Freedom"

"Universal Grammar and Syntactic Theory"

27.5.95

"Mean Value Theorems - Part

4 : Cauchy's Mean Value Theorem"

"Economic Thoughts of Karl Marx - Part 3"

"Water and the City"

28.5.95

"Form and Idea - Part I"

"Identifying Fibers"

"The Week Ahead"

30.5.95

"Ware House : Categories"

"Heritage India : Part I : Buddhism in Andhra Pradesh"

"Acupuncture - Part IV : On Pins and Needles"

IInd Transmission

1.00 p.m. to 2.00 p.m.

22.5.95

"Electromagnetism - Part I"

"Introduction to the Union Budget - Part I"

"Mutation Breeding in Plants"

23.5.95

"Dyestuffs : Return to Nature"

"Higher Education : Future Scenario"

"Oxygen Radicals & Antioxidants Part IV : Myocardinal Antioxidant Changes"

24.5.95

"Advanced Transportation"

"Why History?"

"Prawn Farming - Part III : Science of Prawn Farming"

25.5.95

"Optical Fibre Communication - Part I"

"Cleaner Technologies for Development"

"A World of English - Part 3 : Interviewer Interviewed"

26.5.95

"Fibonacci Numbers - Part II"

"Research in Political Science: Interviews"

"Clean-up Kodagu"

27.5.95

"Variations on America - Part III : The Music of George Gershwin"

"Judo : A Competitive Sport"

"The Week Ahead"

28.5.95

No Telecast

29.5.95

"Electromagnetism - Part II"

"Introduction to the Union Budget - Part II"

"Vermiculture : From Organic Garbage to Biological Fertilizers"

30.5.95

"Organic Reaction Mechanisms - Part I : An Introduction"

"Tryst '95"

"Oxygen Radicals and Antioxidants - Part V : Indegenerative and Inflammatory Diseases"

31.5.95

"Future Habitats"

"Approach to Archaeology"

"Insects of Mangroves"

Hindi Telecast

प्रात: 6.00 से 6.30 बजे तक

22.5.95

'औद्योगिक क्षेत्र में मानवी सम्बन्ध भाग–3'

'औद्योगिक क्षेत्र में मानवी सम्बन्ध भाग–4'

24.5.95

'निसंतांता : कारण व निदान'

26.5.95

'समझ आवाज की भाग–1'

'इट्स नेवर टू लेट'

29.5.95

'समझ आवाज की भाग–2'

31.5.95

'शेखावटी के भित्तिचित्र'

Fake Universities

The University Grants Commission (UGC) has once again issued a warning to all states about the mushroom growth of fake universities and urged them to identify such institutions and initiate legal action against them.

The issue figured at the recent meeting of the state education secretaries when the UGC released a list of 24 fake universities, functioning in violation of the UGC Act, which have been identified by the commission. The 24 fake universities identified by the UGC include: Urdu University, Bhopal; Raja Arabic University, Nagpur, Maharana Pratap Shiksha Niketan Vishwavidyalaya, Pratapgarh (UP), U.P. Vishwavidyalaya, Vocational University, Delhi; UN University, Delhi; National University, Nagpur; St. John's University, Kishnattam (Kerala); Globe University of Science, Kumakonam (Tamil Nadu); Arya University, Srinagar (J&K), Bible University, Ambur (North Arcot); Eastern Orthodox University, Ambur (North Arcot), Bharatiya Shiksha Parishad, U.P., DDB Sanskrit University, Puturtritchi (Tamil Nadu), Shrimati Mahadevi Verma Open University, Mughal Sarai (UP), Netaji Subhash Chandra Bose University, Aligarh, National University of Electro-complex Homeopathy, Kanpur, Gandhi Hindi Vidyapith Prayag, Allahabad, Indian Education Council of UP, Lucknow, Testator Research University, Bodinayakanur (Tamil Nadu), Commercial University, Delhi, Varanaseya Sanskrit Vishwavidyalaya, Varanasi, Mahaila Gram Vidyapeeth, Allahabad and Maithili University, Darbhanga (Bihar).

News from Abroad

Copenhagen Declaration and Programme of Action

The World Summit for Social Development held in Copenhagen, which was attended by leaders from 118 countries, adopted a Declaration and Programme of Action to address the underlying causes of poverty, unemployment and social exclusion. The Summit was the largest gathering of heads of State and Government and the first to address at the highest government level, the major social challenges which breed unrest, hamper economic development and impede a lasting peace.

The Copenhagen Declaration contains a set of 10 commitments, which will form the basis of the international community's drive to confront the structural causes and distressing consequences of "profound social problems". The Programme of Action recommends international and national measures aimed at eliminating inequities within and among countries and fostering social development policies and programmes.

At the Summit, Denmark announced debt forgiveness to poor countries totalling a billion Kroner, and the Chancellor of Austria said his Government would write off bilateral credits worth over $ 1000 million. The President of the Republic of Korea said his Government would provide technical training for more than 30,000 people from developing countries by the year 2010. The Vice-President of the United States unveiled an initiative to channel 40 per cent of the country's development assistance through non-governmental organizations. The President of France and Prime Minister of Norway called for consideration of international taxation systems to finance social development-related programmes.

The potential for cooperation to solve the world's social ills had never been greater, according to Secretary-General Boutros Boutros-Ghali, as he addressed heads of State and government at the World Summit for Social Development. The east-west divide had disappeared, and the north-south confrontation was giving way to a more global approach, the Secretary-General said. The new economic and social challenge was not confrontation, but the widening divide between those who could make it on their own and those who could not and would need the international community's cooperation. The spirit of the Summit's agenda must reflect a sense of solidarity within nations and between nations which did not allow the privileged to ignore the poor, vulnerable or marginalized.

The Secretary-General said today's acute social ills, including crime, drugs, disease, urban decay and declining standards of education, all had social consequences for human security. Social problems which were once confined within borders, now spread across the world and required global attention. True and lasting success could only be achieved through patient and deliberate efforts. Governments would need to act in partnership with experts, parliamentarians, grassroot and religious organizations, trade unions, community associations, businesses, scientists and non-governmental organizations to solve these problems.

The draft Declaration contains nine commitments: to create an "enabling environment" for social and economic progress; to eradicate poverty; to promote full employment; to promote "social integration by fostering societies that are stable, safe, and just"; to achieve equality and equity between women and men; to accelerate economic, social, and human resource development in African and least developed countries; to ensure that structural adjustment programmes include social development goals; to increase the resources allocated for social development, in net terms and/or through improved efficiency; and to improve the framework for international cooperation in social development, including a special session of the UN General Assembly in the year 2000 to assess implementation of the Copenhagen commitments.

Fourth World Conference on Women

The Fourth World Conference on Women, scheduled to be held in Beijing from 4 to 15 September, was no longer about diagnosing problems, but about removing obstacles to the advancement of women, said the Secretary-General of the Conference, Gertrude Mongella, in New York recently. Mrs. Mongella was accompanied by the Chairperson of the Commission on the Status of Women, Patricia Licuanan.

The Beijing Conference was also about actions and commitments, Mrs. Mongella said. Women's issues had become society's issues. The world had realized that, for development to become a reality, women needed to be active participants. Thus, some of the main areas of concern for the Conference were the empowerment of women, the achievement of gender equality, the allocation of resources for women, and the participation of women in decision-making areas, she said.

Ms. Licuanan said that the Commission, which met at Headquarters from 15 March to 4 April, was working on the draft platform for action, to be presented for adoption by the World Conference as a "blueprint" for women's advancement throughout the world. Thus far, the Commission's member States agreed on most issues, although there were still some "areas of contention". The Commission was also working on the rules of procedure for the Conference. The great number of suggestions and amendments to the draft platform was considered a "good sign that countries have strong feelings about women's issues", she added.

Ms. Licuanan said that the main areas of dispute within the draft platform for action related to women's health and human rights. "There are a lot of amendments in those areas", she said. Mrs. Mongella added that there was great debate, because women were not a homogenous group. Women living in developed countries faced different problems from those in developing ones. "While some are looking for the water to wash the dishes, the others are looking for the dishwasher", she said.

Mrs. Mongella felt that since the Nairobi Conference in 1985, progress had been achieved in "sensitizing the society". Society had come to understand that women needed to be full participants at every level in order for it to progress. In addition, there had been a global recognition that democracy was not possible unless women actively participated in it. Ms. Licuanan added that since 1985 most countries had removed their discriminatory laws against women—in conformity with the Convention on the Elimination of All Forms of Discrimination Against Women—although, in reality, while legal discrimination had been removed, actual implementation of laws against discrimination was still pending.

What types of actions would come out of the upcoming Conference? Ms. Licuanan said that women's contributions to their national economies, which until today had been undervalued, would be taken into account. Methodologies were being developed to account for women's economic contribution in their societies as homemakers and family providers. In addition, more countries would provide women with access to credit.

Mrs. Mongella added that the Conference would raise the importance of women, especially in the areas of human rights and democracy. There could be no democracy if only 10 per cent of women world wide were voters, she emphasized. In addition, there could be no respect for human rights when the human rights of more than 50 per cent of the world's population was not respected. Both were global issues and important to all countries, she said.

Each country had the opportunity to present a report of their achievements in the advancement of women since 1985, said Mrs. Mongella. Furthermore, there had been five regional preparatory Conferences in which each region's perspective had been presented and a regional platform for action had been suggested.

Mrs. Mongella said that the upcoming Conference was an opportunity to "globalize human rights questions". Also, the global conference would arrive at a consensus on the main actions to be pursued in the advancement of women. Ms. Licuanan added that a global conference raised the visibility of an issue of concern and strengthened the political will of countries to take actions.

Education Strategies for Women

United Nations Conference on education strategies for women has ended in Bahrain with a call for

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How to apply : Applications may be sent on plain paper stating name, qualification, mailing address, age, etc., alongwith a passport size photograph, attested copies of certificates in proof of their age, qualification and caste and a crossed demand draft of Rs. 100/- (Rs. 75/- for SC/ST candidates) drawn on any nationalised bank in favour of "CEDT, Imphal", payable at Imphal. The envelope should be marked with "Application form for `O' level course". All correspondences should be addressed to The Director, CEDT, P.B. No. : 104, Imphal-795001. **Last date of receipt of application is 24.05.1995.** Admission test and selection interview will be held on 01.06.1995 at CEDT, Akampat, Imphal. (Tel/Fax: (0385)223578, Gram: CEDT, Imphal)

davp 1248(1)95

close partnership of various institutions in order to integrate more girls in basic schooling.

"Unless we organise a strong partnership of various non-governmental and governmental organisations we will not get the huge job done," said Frank Dall, education adviser of the West Asia and North *Africa's regional office of the* U.N. Children's Fund (UNICEF).

The data showed that the biggest missing group in education were girls. Mr Dall said an alarmingly high percentage of girls were pulled out of primary education throughout the region.

Apart from poverty, that was still the main reason for the drop-out, traditional values, particularly in rural areas, as well as poor teaching performances and poor curricula, were prime reasons for the problem, he said.

The four-day conference organised by UNICEF was the first of its kind in the Gulf region. Some 70 experts from educational institutions of 17 countries, including the U.N. Educational, Scientific and Cultural Organisation (UNESCO) and Save the Children Fund, discussed country case studies as well as global strategies for girl's education.

An action plan was also issued including recommendations to regional governments.

Governments had to be challenged to look beyond business as usual and establish small scale projects in rural areas that did not need big investments, the experts agreed.

They also recommended that school curricula be more gender sensitive, offer material that was relevant to children in their particular environment and hire more female teachers in the secondary level.

"Due to the fact that a lot of parents find that what their children are taught leads to irrelevance, the content has to reach a level that is broader than the traditional one," Mr Dall said.

माखनलाल चतुर्वेदी राष्ट्रीय
पत्रकारिता विश्वविद्यालय

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प्रवेश सूचना 1995 96

माखनलाल चतुर्वेदी राष्ट्रीय पत्रकारिता विश्वविद्यालय की स्थापना मध्यप्रदेश राज्य शासन द्वारा एक अधिनियम के अन्तर्गत 1990 में की गई । यह विश्वविद्यालय पत्रकारिता, जनसंचार, भाषाई सम्प्रेषण एवम् संचार से जुड़े तकनीकी विषयों के शिक्षा, अध्ययन, प्रशिक्षण एवं शोध के राष्ट्रीय केन्द्र के रूप में विकसित किया जा रहा है । विश्वविद्यालय में हिन्दी माध्यम में व्यावहारिक शिक्षा एवं रोजगारोन्मुख पाठ्यक्रमों पर विशेष बल दिया जाता है। शैक्षणिक सत्र 1995-96 में प्रवेश के लिये इच्छुक विद्यार्थियों से आवेदन आमंत्रित किये जा रहे हैं ।

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1. पत्रकारिता 2. जनसंपर्क 3. पुस्तकालय तथा सूचना विज्ञान
अर्हता – किसी भी मान्यता प्राप्त विश्वविद्यालय से किसी भी संकाय में स्नातक उपाधि ।
अधिकतम आयु – 1 सितम्बर 95 को 30 वर्ष ।

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1. पत्रकारिता एवं जनसंचार :
अर्हता – पत्रकारिता/जनसंचार/जनसम्पर्क में किसी भी मान्यता प्राप्त विश्वविद्यालय से स्नातक उपाधि द्वितीय श्रेणी में ।
2. पुस्तकालय तथा सूचना विज्ञान :
अर्हता – पुस्तकालय तथा सूचना विज्ञान में किसी भी मान्यता प्राप्त विश्वविद्यालय से स्नातक उपाधि द्वितीय श्रेणी में ।

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अर्हता – किसी भी मान्यता प्राप्त विश्वविद्यालय से किसी भी संकाय में स्नातक उपाधि।

उपरोक्त सभी पाठ्यक्रमों में प्रवेश, लिखित परीक्षा एवं साक्षात्कार से सभी पाठ्यक्रमों में आवेदन की अंतिम तिथि: 10 जुलाई 1995

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विश्वविद्यालय द्वारा इस सत्र से शोध उपाधि कार्यक्रम भी प्रारम्भ किया जा रहा है । शोध हेतु पंजीयन पत्रकारिता/जनसंचार/जनसम्पर्क/पुस्तकालय तथा सूचना विज्ञान से सम्बन्धित *विषयो में ही किया जायेगा ।*
अर्हता: 55 प्रतिशत अंकों के साथ स्नातकोत्तर उपाधि अथवा एम. फिल. समतुल्य ग्रेड में। स्नातकोत्तर उपाधि के बाद जनसंचार अथवा सूचना विज्ञान की किसी विधा में सात वर्ष की नियमित सेवा का अनुभव होने पर द्वितीय श्रेणी धारक भी आवेदन कर सकते हैं ।

आवेदन करने की तिथि: प्रतिवर्ष 1 अगस्त और 1 जनवरी

उपरोक्त सभी पाठ्यक्रमों में प्रवेश के लिये अलग–अलग निर्धारित आवेदन पत्र – 40/- रुपये नगद भुगतान, बैंक ड्राफ्ट अथवा पोस्टल आर्डर जो कि विश्वविद्यालय के नाम से भोपाल में देय हो भेजकर प्राप्त किये जा सकते हैं ।

पंजीयक

BOOK REVIEW

Inscriptional Evidences of Jagannathism

B.L. Ray*

S.N. Rajaguru, Inscriptions of the Temples of Puri and Origin of Sri Purusottama Jagannath. Volume 1. Srivihar, Puri, Sri Jagannath Sanskrit Vishvavidyalaya, 1992. p. 224. Rs. 300/-.

The temple of Lord Jagannath at Puri and its deities Jagannath, Balabhadra and Subhadra have rich cultural tradition which reflects the socio-cultural life of the people of Orissa (the Land of Purusottama). Lord Jagannath is the Purusottama of Gita, symbolising the 'Ksara Purusa' and the 'Aksara Purusa', pervading the heart of all beings. He is regarded as the Creator who can move about without feet. He can see without eyes and hear without ears. He is called Daru-brahma whose original form was Nilamadhava worshipped by the great Sabara Visvavasu. The God appeared in the east-sea in the form of Daru which is unveiled from the readings of Rg Veda as follows:

"Ado Yaddaru plavate Sindhoh Pare apurusam /

Tada rabhasva durhano tena gaccha parastaram //"

(RV, X. 155.3)

Later, the present forms of the deities were formed by the order of the King Indradyumna. Brahma installed these deities in the temple built by the King (NM, 5. 109-115).

The uniqueness of Lord Jagannath lies in the fact that originally a deity worshipped by the autochthonous Sabaras, gradually embraced all the religious sects like Jainas, Buddhas, Saivas, Saktas, Vaisnavas, Ganapatyas, Sauras and Nathas, etc. Consequently, the cult of Jagannath came to be regarded as the religion of the masses or 'Gana Dharma'. It now represents one of the most important constituents of Hindu religion and Culture. It embodies within itself the principles of secularism, religious tolerance, co-existence, equality of castes and creeds and of socialism.

Innumerable Sanskrit works like the Vedas, the Puranas and the Samhitas provide copious evidences of Lord Jagannath and its cult. From the time of the Vedas down to date, many scholars have been attracted by Jagannathism in order to explore the untrodden areas of literature which illuminate the origin and antiquity of Lord Jagannath. Several Indian scholars like S.N. Rajguru, K.C. Mishra, G.C. Tripathy, G.N. Mahapatra, S.N. Dash, Sadasiva Rathasharma et sq. and the foreign scholars, namely, A. Eschmann, H. Kulke, H.V. Stietencron have tried their level-best to solve many difficult problems concerning the cult and the iconic features of Lord Jagannath basing on the literary and epigraphic evidences available till then. But these previous observations lack in the evidences provided by some recently discovered inscriptions of Puri. S.N. Rajaguru, the well known epigraphist of Orissa has taken up the strenuous task to critically edit the newly discovered inscriptions of Nrusimha temple and some other inscriptions of Sriksetra. His present work is the outcome of such a study. Here the author discusses some important aspects relating to the history of Lord Jagannath from the inscriptional point of view.

The present work is based on the critical analysis of 27 inscriptions discovered from three temples at Puri, viz. Nrusimha, Markandesvara and Patalesvara temples. The findings are mentioned in a nutshell by the author in the introduction of the book. The approach of the author is very scientific since he admits that his findings are subject to revision if more evidence would come to light in future. Thus, he refuses to accept any finding to be absolute or final.

All these inscriptions critically edited in the present treatise are incised in between 1113 to 1238 A.D. when the Imperial Ganga-Kings (from Anantavarma Chodaganga upto Anangabhima-III) have ruled, the country called 'Trikalinga'. In all the votive inscriptions of Nrusimha temple, the deity installed in it was called Purusottama. Thus, the work of Rajaguru throws light on the origin of Sri Purusottama-Jagannath from epigraphical sources.

**Reader and Head, Department of Sanskrit, Nayagarh College (Utkal University), Nayagarh-752 069.*

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RESEARCH IN PROGRESS

A list of research scholars registered for doctoral degree in Indian Universities

PHYSICAL SCIENCES

Physics

1. Boban, T G. **Radiation dosimetric studies in the high natural background radiation areas in Kerala.** Kerala. Dr V Padmanabhan, Assoc. Prof, Regional Cancer Centre, Thiruvananthapuram.

Chemistry

1. Ahluwalia, Rekha. **Excess properties of some binary organic liquid mixtures.** Panjab. Dr R K Wanchoo, Reader and Dr J L Vashisht, Reader, Department of Chemical Engineering and Technology, Panjab University, Chandhigarh.

Earth Sciences

1. Dubey, Sandeep Kumar. **Geological and geotechnical studies around Rajghat dam site area, Sagar.** H S Gour. Dr S K Gupta, Department of Applied Geology, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

Engineering

1. Singh, Suprabhat. **Ground improvement using geosynthetics.** *BHU. Dr C Ghosh, Department of Civil Engineer*ing, Banaras Hindu University, Varanasi.

BIOLOGICAL SCIENCES

Environmental Sciences

1. Pradhan, Sunanda Chandra. **Earthworm activity and soil metabolism in soil treated with carbaryl insecticide.** Sambalpur. Dr Pramod Chandra Mishra, Reader, Department of Environmental Sciences, Sambalpur University, Jyoti Vihar, Burla.

Biology

1. Sobhana Kumari, S. **Studies on Atyid shrimps of Kerala.** Kerala. Dr S D Rita Kumari, Department of Aquatic Biology and Fisheries, University of Kerala, Thiruvananthapuram.

Biochemistry

1. Ganu, Jayashree Vidyadhar. **Biochemical studies in pulmonary diseases.** Shivaji. Dr S K Ahaley, Government Medical College, Miraj.

Botany

1. Chharia, Durgesh Nandan. **Ethnobotany of endangered plants belonging to Poaceae family used as food by the tribals of western Orissa.** Sambalpur. Dr P K Mohapatra, Prof, School of Life Science, Sambalpur University, Jyoti Vihar, Burla.

2. Joseph, Latha. **The biosystematic studies on the genus Oryza.** Kerala. Dr Philomena Kuriachan, Department of Botany, University of Kerala, Kariavattom.

3. Nair, Lakshmi G. **In vitro culture of selected woody plants.** Kerala. Dr S Seeni, Tropical Botanic Garden and Research *Institute, Palode.*

4. Swain, Puspenita. **Physico-chemical properties of Candida *albicans species isolated from superficial skin injections* of patients — some case studies.** Sambalpur. Dr B K Choudhary, Lecturer, Department of Botany, Government College, Rourkela.

Zoology

1. Santhakumari, K. **Studies on the effects of insecticide toxicity on lentic community.** Kerala. Dr K N Parameshwara Kurup, Department of Zoology, N S S College, Pandalam.

Medical Sciences

1. Chattopadhaya, Raja. **Developments of heterosteroids of biological significance.** Panjab. Prof D P Jindal, Institute of Pharmaceutical Sciences, Panjab University, Chandigarh.

2. Padmaja, V. **Phytochemical and biological studies on some annonaceous plants.** Kerala. Dr N Radhakrishna Pillai, Assistant Director, C.D.R.S. Unit, Department of Pharmacology, Medical College, Trivandrum, and Dr A Hisham, Lecturer, Department of Chemistry, College of Engineering, Trivandrum.

3. Umashankar, D C. **Phytochemical and anti-inflammatory *investigations of Bergenia ligulata Yeo.*** *Panjab. Prof S S* Handa and Prof A S Chawla, Institute of Pharmaceutical Sciences, Panjab University, Chandigarh.

THESES OF THE MONTH

A list of doctoral theses accepted by Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Bansal, Sarita. **Random walk and distributions of rank order statistics.** Delhi.

2. Dixit, Vaijayanti Ulhas. **Statistical inference for AR (1) processes with mixed errors.** Shivaji. Dr M S Prasad, Prof and Head, Department of Statistics, Shivaji University, Kolhapur.

3. Ibochouba Singh, Longjam. ***Some cosmological problems* on relativistic physical contributions.** Manipur. Prof R K Tarachand Singh Department of Mathematics, Manipur University, Imphal.

4. Kochhar, Vijay Kumar. **On boundary value problems in elasticity.** Dayanand.

5. Rajeev Kumar. **Some contribution to multiparameter shrinkage estimation.** Dayanand.

6. Sarma, Ratna Dev. **Fuzzy topological structures.** Delhi.

7. Sharma, Arup Kumar. **On modification of analysis of variance model.** PAU.

8. Subrahmanyam, B V. **On some aspects of inventory models.** Andhra.

Physics

1. Desai, Jayawant Dinkarrao. **Preparation and physico-chemical characterisation of Bi_2S_3, As_2S_3 and Sb_2S_3 thin films.** Shivaji. Dr C D Lokhande, Lecturer, Department of Physics, Shivaji University, Kolhapur.

2. Dey, Tushar Kanti. **White holes, black holes and related problems.** Burdwan. Prof Sri Ranjan Banerjee, Department of Physics, University of Burdwan, Burdwan.

3. Gawade, Rajendra Jagannath. **The study of effect of *cations substitution in Mg Fe_2O_4 ferrite system.*** *Shivaji.* Dr B V Khasbardar, Reader, Department of Physics, Shivaji University, Kolhapur.

4. Gurubaran, S. **Investigation of low latitude thermosphere ionosphere system.** Gujarat. Dr K G Jani, Department of *Physics, University School of Science, Ahmedabad.*

5. Ingle, Sharadchandra Govind. **Defect dependent domain behaviour in $KNbO_3$ single crystals.** *D.Sc.* Nagpur.

6. Jayavel, R. **Studies on growth and characterization of high temperature superconducting single crystals.** Anna. Dr C Subramanian, Director, Crystal Growth Centre, Anna University, Madras.

7. Kansal, Manish Kumar. **Molecular dynamics of the phase transition in methane and deuterated methane crystals.** Delhi.

8. Krishna Prasad, A S. **Lower body negative pressure system in relation to + Gz stress.** Bangalore. Dr C A Verghese, Defence Bioengineering and Electromedical Laboratory, Bangalore and Prof N Devaraj, 791, 9th Main, IV Block West, Jayanagar, Bangalore.

9. Kulkarni, Sunil Giridhar. **Development of humidity sensing material using soft ferrites.** Shivaji. Dr A S Vainganka r, Reader, Department of Physics, Shivaji University, Kolhapur.

10. Lehri, Deepti. **Some theoretical simulation studies on the determination of material parameters in a semiconductor with and without localised states.** Delhi.

11. Patil, Maruti Ganpati. **Structural, electrical and magnetic *properties of tetravalent ion substituted Cd-Ni ferrites.*** Shivaji. Dr S A Patil, Reader, Department of Physics, Shivaji University, Kolhapur.

12. Patil, Smrutika Shankarrao. **Study of ionospheric scintillations at Kolhapur : Geographical latitude 16°42′N, geographical longitude 74°14′E.** Shivaji. *Dr R V Bhosale,* Department of Physics, Shivaji University, Kolhapur.

13. Raikar, Uday Shantaram. **Determination of spectroscopic constants and other data for certain diatomic and polyatomic molecules.** Shivaji. Dr M K Soudagar, Reader, *Department of Physics, Shivaji University, Kolhapur.*

14. *Shinde, Vilas Netaji.* ***Studies on pulse plating conditions*** **and properties of Bi-Sr-Ca-Cu-O superconducting films.** Shivaji. Dr S H Pawar, Prof, Department of Physics, Shivaji University, Kolhapur.

15. Srinivasa Rao, Y. **Structural and spectroscopic studies *on* R-Cu-O (R=Y-Ba & Ba), $AZrO_3$ (A=Ba & Pb) and MNH_4SO_4 (M=Li, K & AG) systems.** Hyderabad. Dr C S Sunandana.

16. Sur, Hiramohan. **Crystal structure determination of some organic and organometallic compounds by X ray diffraction.** Burdwan. Dr S C Chakraborty, Prof (Retd), Department of Physics, University of Burdwan, Burdwan and Dr S K Seth, Department of Physics, Presidency College, Calcutta.

17. Verma, Vijay Kumar. **The η' (958) meson produced in the $\pi\bar{p}$ interaction.** Magadh.

Chemistry

1. Ashok. **Molecular orbital study of gamma-pyrone and alpha-pyrone systems.** Delhi.

2. Awate, Shobhana Vaman. **Synthesis and characterization of zeolite catalysts.** Shivaji. Dr P Ratnasamy, Dy Director, National Chemical Laboratory, Pune.

3. Chandrasekhar Reddy, R. **Novel bulk and supported vanadium phosphorus oxide catalysts for oxidation and ammoxidation of toluene.** Osmania. Dr P Kanta Rao, Indian Institute of Chemical Technology, Hyderabad.

4. De, Pampa. **Kinetics and mechanism of ligand substitutions in aquo complexes of chromium (III).** Burdwan. Prof G S De, Department of Chemistry, University of Burdwan, Burdwan.

5. De, Santanu. **Chemistry of alpha, w-diaryl alkanoids and the related bridge biphenyls and biphenyl ethers phenolic cyclophanes.** Delhi.

6. Debroy, Mukti. **Studies on preparation characterisation and properties of natural and synthetic fibre reinforced lime pozzolana cements and concretes.** Nagpur. Dr S S Dara, Department of Chemistry, *Visveswaraiya Regional College of* Engineering, Nagpur.

7. Dutta, Promod Chandra. **Study of the influence of substituent and solvents on stability of intramolecular hydrogen bonded systems.** Dibrugarh. Dr I Haque, Prof, Department of *Chemistry, Dibrugarh University, Dibrugarh and Dr I* Suryanarayana, Scientist C, Department of Analytical Chemistry, Regional Research Laboratory, Jorhat.

8. Gaikwad, Maya Naresh. **Beneficiation characteristics of mixed sulphide ores of Malanjkhand Copper Project, Balaghat District Madhya Pradesh.** Nagpur. Dr M R Patil, Department of Chemistry, Institute of Science, Nagpur.

9. Ghugikar, Vithal Gunderao. **Studies in catalytic slurry reactors.** Shivaji. Dr R V Choudhari, Dy Director, Chemical Engineer- ing Division, National Chemical Laboratory, Pune.

10. Gopalakrishnan, G. **Synthesis, modification, characterisation and catalytic activity *of* zeolite beta.** Anna. Dr V Krishnasamy, Prof, Department of Chemistry, Alagappa College of Technology, Madras.

11. Gupta, Manoj Kumar. **Investigation on synthesis and characterization of physico-chemical properties of bipyridyl containing polyamide-imide.** *Durgavati. Dr S K Nema,* Department of Macro-Molecular Research Centre, Rani Durgavati Vishwavidyalaya, Jabalpur and Dr U D N Bajpai, Department of Chemistry, Rani Durgavati Vishwavidyalaya, Jabalpur.

12. Jayapal Reddy, Malladi. **Synthesis, spectral and physicochemical studies on transition metal complexes of some polydentate amide group ligands.** Delhi.

13. Joshi, Deepika Milind. **Polarographic and photometric studies of some medicinally important compounds.** Nagpur.

Dr A P Joshi, Department of Chemistry, Nagpur University, Nagpur.

14. Krishna Kumar, C. **Studies on naphthyl ester hydrolysing enzymes from horsegram, Dolichos biflorus L.** Bangalore. Dr P S Veerabhadrappa, Department of Chemistry, Bangalore University, Bangalore and Dr N H Manjunath, Reader, Department of Biochemistry, Bangalore University, Bangalore.

15. Lali, Thomas Kotturan. **Studies on transition metal complexes of Schiff bases derived from alicyclic compounds.** Calicut. Dr Geetha Parameswaran, Department of Chemistry, University of Calicut, Calicut.

16. Mahanti, Bibekananda. **Kinetics of ligand substitution in ruthenium (II) complexes.** Burdwan. Dr G S De, Department of Chemistry, University of Burdwan, Burdwan.

17. Mukhopadhyay, Chandi Charan. **Kinetics and mechanism of ligand substitution in octahedral Cr (III) and Co (III) complexes.** Burdwan. Prof G S De, Department of Chemistry, University of Burdwan, Burdwan.

18. Munnolli, Ravindra Siddappa. **Diffusion and sorption of liquids into polymer membranes.** Karnatak. Dr T M Aminabhavi, Department of Chemistry, Karnatak University, Dharwad.

19. Naga Raju, Yellapantula. **Analytical applications of dyes and studies on tristimulus colorimetry of complexometric indicators.** Andhra.

20. Nikalje, Dattu Dhondiba. **Studies in multiphase catalytic reactions.** Shivaji. Dr R V Choudhari, Dy Director, Chemical Engineering Division, National Chemical Laboratory, Pune.

21. Nimbalkar, Ramchandra Vaman. **Spectrophotometric determinations of some metal complexes with aminoguanidines.** Shivaji. Dr (Smt) S G Kavatkar, Reader, Department of Chemistry, Shivaji University, Kolhapur.

22. Pandurangan, A. **Quinolinium fluorochromate and quinolinium bromochromate new reagents for the oxidation of organic compounds : Synthetic and kinetic studies.** Anna. Dr V Murugesan, Asstt Prof,Department of Chemistry, College of Engineering, Madras.

23. Patel, Atulkumar Dhirubhai. **Studies on some heterochelates.** Patel. Dr J D Joshi.

24. Patel, Lave Ramanlal. **Studies in synthesis of nitrogen heterocyclic compounds and their properties.** Gujarat. Dr Franco Judas, Bhavan's R A College of Science, Ahmedabad.

25. Patel, V J. **Studies on transition metal complexes.** Saurashtra. Dr G K Joshi.

26. Patil, Sucheta Vyankatrao. **Synthesis of oligodeoxynucleotides with pendant groups at phosphorus.** Shivaji. Dr M M Salunkhe, Reader, Department of Chemistry, Shivaji University, Kolhapur.

27. Ray, Bijan Kumar. **Aspects of asmium-bound 2-R-quinolin-8-OLS : Synthesis, spectra and electron transfer behaviour.** Burdwan. Dr B K Ghosh, Department of Chemistry, University of Burdwan, Burdwan.

28. Sagar, Ashok Dnyanu. **Synthesis and applications of aromatic polyamides and modified polystyrenes.** Shivaji. Dr M M Salunkhe, Reader, Department of Chemistry, Shivaji University, Kolhapur.

29. Santhana Raghavan, P. **Crystal growth instrumentation: Crystal growth and characterization of GaAs and InP crystals and simulation studies of InP LPE.** Anna. Dr P Ramasamy, Vice-Chancellor, Alagappa University, Karaikudi.

30. Sapana. **Investigation on some organic derivatives of tellurium (IV).** Dayanand.

31. Siddhanta, Sukti. **Study of adsorption of some organic ligands of granular activated carbon and their use as metal scavengers.** Nagpur. Dr G S Natarajan, Department of Physical Chemistry, Laxminarain Institute of Technology, Nagpur.

32. Venkateswara Rao, C R. **Synthesis, characterization and superconductivity studies of single crystals of high Tc oxides and fullerides.** Anna. Dr C Subramanian, Director, Crystal Growth Centre, Anna University, Madras.

33. Vijaya, C. **Studies on zirconium pillared clay catalysts.** Anna. Dr B Siva Sankar, Asstt Prof, Department of Chemistry, College of Engineering, Madras.

34. Vijayakumar, S. **Studies on surface characteristics and catalytic activities of chromium pillared clays.** Anna. Dr B Sivasankar, Asst Prof, Department of Chemistry, Anna University, Madras.

35. Zambare, Dnyandevo Namdevo. **Column chromatographic separation of some elements with poly-dibenzo-18-crown-6.** Shivaji. Dr B S Mohite, Lecturer, Department of Chemistry, Shivaji University, Kolhapur.

Earth Sciences

1. Dhaka, Surendra Kumar. **Some studies of wind and wave characteristics in the Indian tropical middle atmosphere.** Delhi.

2. Girija Devi, Elangbam. **Geomorphology of the Leimatak basin.** Manipur. Dr R A S Kushwaha, Department of Earth Sciences, Manipur University, Imphal.

3. Kulkarni, Dhaval Dattatray. **Geological fluid inclusion geothermometric ore genetic studies around Dhukonda mine, Guntur District, Andhra Pradesh.** Shivaji. Dr R R Patil, Reader, Department of Geology, Shivaji University Centre for Post Graduate Studies, Solapur.

4. Kulkarni, Sanjay Anant. **Textural and mineralogical studies of the coastal sediments between Karli Creek, to Talavda Creek Sindhudurg District, Maharashtra, India.** Shivaji. Dr R K Sukhtankar, Prof and Head, Department of Geology, Shivaji University Centre for Post Graduate Studies, Solapur.

5. Mahanta, Subodh Kumar. **Some sedimentological and the economic aspects of the recent sediments of the River Subansiri in and around Gerukamukh and Dirpaimukh, Lakhimpur District, Assam.** Gauhati. Dr R N Sharma, Scientist, Regional Research Laboratory, Jorhat and Dr P K Das, Reader, Department of Geological Science, Gauhati University, Guwahati.

6. Malleswara Rao, T Ch. **The approaches in SAR data processing and 3D modelling.** Andhra.

7. Mishra, Umesh Kumar. **A contribution towards the palaeobiota of Cretaceous tertiary rocks from parts of Manipur East and Chandel Districts Manipur, India.** Gauhati. Prof P K Chowdhury, Head, Department of Geological Science, Gauhati University, Guwahati and Dr G Barman, Geologist, Geological Survey of India, Regional Geology Division, Guwahati.

8. Pasin, Kapil Narendrakumar. **Geochemical and structural controls of fluorite mineralisation around Dongargaon area in Chandrapur District, Maharashtra.** Nagpur. Dr A N Deshmukh, Department of Geology, Nagpur University, Nagpur.

Engineering

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2. Chatterjee, Pradip Kumar. **Fluidised bed gasification of coal.** Burdwan. Dr K M Kundu and Dr A B Datta, Central Mechanical Engineering Research Institute, Durgapur.

3. Mandre, Narayan Rittappa. **Studies on direct leaching of lead-zinc sulphide ore and concentrate.** ISM. Dr T Sharma, Indian School of Mines, Dhanbad.

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AGE LIMIT The minimum age limit for admission to M Sc shall be 19 years and for Ph D. 21 years as on 31st December, 1995 No relaxation in age limit is allowed.

ENTRANCE TEST The written examination will be held at Bhopal, Bombay, Calcutta, Delhi and Madras. The tentative date for Written examination is 23rd July, 1995 The Candidates other than SC/ST will have to appear for the examination at their own expenses.

SCHOLARSHIP . All the candidates who will join M.Sc./Ph.D. programmes during 1995-96 academic session will ordinarily be paid Scholarship at the rate of Rs. 1200/- and Rs. 1800/- per month respectively. However, continuance of scholarship is subject to their maintaining minimum OGPA prescribed.

Application form and Prospectus containing detailed information with regard to eligibility, prescribed qualifications, syllabus for examination, etc may be obtained with effect from **May 5, 1995** on payment of Rs. 50/- in Cash at the Cash Counter in Room Number 49, Director's Office, IARI or if desired by Post by sending a Demand Draft for Rs. 60/- (Rs. 75/- if required by Registered Post) drawn **in favour of the Registrar (Academic), Post Graduate School, Indian Agricultural Research Institute, Pusa, New Delhi-110012** *The Institute shall not be responsible for non-receipt or late receipt of application form for* any reason including loss/delay in postal transit.

Last date for Issue of Prospectus and forms (I) By Post : 15-06-1995
(II) At IARI Counter : 19-06-1995
Last date for receipt of applications : 19-06-1995
The last date for receipt of applications from the candidates residing in Assam, Meghalaya, Arunachal Pradesh, Mizoram, Manipur, Nagaland, Tripura, Sikkim, Ladhakh Division of Jammu & Kashmir State, Lahaul & Spiti District and Pangi Sub-Division of Chamba District of Himachal Pradesh, Andaman & Nicobar Islands and Lakshadweep, complete in all respects : 03-07-1995
Date of Written Examination : 23-07-1995
Date for Interview for Ph.D. Admission : 19-08-1995

While asking for Prospectus, Postal Address should be mentioned clearly in BLOCK LETTERS and also whether it is required for admission to M.Sc. or Ph.D. degree course.

KURUKSHETRA UNIVERSITY, KURUKSHETRA

MORE COURSES FOR NEW CAREERS

NEW COURSES AT UNIVERSITY CAMPUS

S. No.	Name of the Course	Duration	Seats + NRI/ Sponsored	*Min Qualifying Exam.	Entrance Test
1	M.Sc Microbiology	2 yrs	10+5	B Sc. Med	6 July, 95
2	*M.Sc. Biotechnology*	2 yrs	*8+2*	*Graduation with Sc./Engg.*	*5 July, 95*
3	*M Tech Educational Technology	2 yrs	15+5	B.Sc./BE	7 July, 95
4	M Sc. Computer Science (Software)	2 yrs	20+5	B.Sc.	8 July, 95
5	B.Tech Instrumentation	4 yrs	10+5	10+2 with 55% in PCM	- do -
6.	** Master of Finance & Control	2 yrs	10+5	Graduation	12 July, 95
7.	** Master of Marketing Technology	2 yrs	10+5	Graduation	12 July, 95
8.	LLB Professional	5 yrs	120+20	10+2	9 July, 95
9	Certificate in Indian Culture & Civilization	2 yrs	20	Graduation	N.A.
10.	Certificate Course in Ticketing & Reservation	4 months	50	Graduation	N.A.
11.	Postgraduate Diploma in Journalism	1 yr	15+5	Graduation	10 July, 95
12.	Advanced Diploma in French	1 yr	15+5	Dip. French	N.A.

OTHER COURSES OFFERED AT THE UNIVERSITY CAMPUS

1. JOB ORIENTED COURSES

M.B A., M.C A , Post B.Sc, Diploma in Computer Science & Application (DCA), Master of International Business (MIB), Master of Tourism Management (MTM), M.A. in Social Work, Post M.A., M Sc. Diploma In Computer Science, P G. Diploma in Instrumentation, P.G Diploma in Electronics

2. SCIENCE COURSES

M.Sc. In Chemistry, Physics, Mathematics, Zoology, Botany, Geology, Statistics & *OR, Electronic Science, Applied Geology, Bio-Chemistry, Atmospheric Science,* Geography, M.Tech In Applied Geophysics.

3. ARTS AND LANGUAGE COURSES

M.A In English, Hindi, Punjabi, Linguistics, Political Science, History, Economics, Psychology, Public Administration, Education, Physical Education, Sanskrit, Philosophy, AIH Culture & Archaeology, Music.

4. PROFESSIONAL COURSES

M.Com., M.Ed., B.Ed. (Special Education), M.Ed. (Special Education), M.Lib. & Information Science, B.Lib & Information Science, LLB (Professional) 3 Yr course (for evening classes only), LLM.

5. DIPLOMA/CERTIFICATE COURSES (EVENING)

One year Diploma In French, German, Russian, Sanskrit.

Certificate in French, German, Russian, Urdu, Persian, Music, Yoga (3 months course)

DEPARTMENT OF DISTANCE EDUCATION NEW COURSES

1.	B.A. (External)	one sitting exam	10+2
2	Master of Financial Management	2 yrs	Graduation
3.	M.Ed Educational Management	2 yrs	Graduation
4.	M.Com.	2 yrs	B Com.

CONTINUING COURSES IN DISTANCE EDUCATION

B.Ed, B A, B.Com., Bachelor of General Law (BGL) Diploma in Library & Information Science, Bachelor of Library & Information Science, Master of Library & Information Science, M.A. in Hindi, English, *Sanskrit, Punjabi, Political Science, Public Administration*, Mathematics, Economics and History

PG Diploma In : Company Law, Tour & Travel Management Journalism & Mass *Communication, Marketing Management, Computer Applications*

NEW COURSES AT PG REGIONAL CENTRE HISAR

S No.	Name of the Course	Duration	Seats +NRI/ Sponsored	*Min. Qual Exam.	Entrance Test
1	M Tech. Computer Science & Engineering	1½yrs	13+5	#B.Tech./B.E./MCA M.Sc with GATE/NET	NA
2.	M.Tech. Environmental Science & Engineering	1½yrs	13+5	M.Sc. Envn. Sc./B.Tech. with GATE/NET	NA
3	MBA	2 yrs	20+10	Graduation	23 July, 95
4	B Pharmacy	4 yrs	30+15	10+2 with Chemistry	To be notified later

CONTINUING COURSES AT PG REGIONAL CENTRE HISAR

S No.	Name of the Course	Duration	Seats +NRI/ Sponsored	*Min. Qual Exam.	Entrance Test
1	M.Sc. Mass Communication	2yrs	30+5	Graduation	6 July, 95
2	M.Sc. Environmental Science	2 yrs	25+5	B.Sc.	3 July, 95
3.	*M.Sc. Applied Maths*	2 yrs	30+5	B.A./B.Sc with Maths	2 July, 95
4	Master of Business Economics (MBE)	2 yrs	30+5	Graduation	6 July, 95
5.	M.Sc. Industrial Chemistry	2 yrs	20+5	B Sc. with Chemistry	3 July, 95
6.	LL.B. (Professional) Hisar & Sirsa	3 yrs	80 each	Graduation	9 July 95

DATES OF ENTRANCE TESTS FOR CAMPUS COURSES

4 July 95	**M.Sc.** Chemistry, Bio-chemistry, **M.A.** in Punjabi, English, Political Science, Economics, **M.Ed.**
5 July 95	**M.Sc.** Physics, Zoology, Electronics Sc., Botany Biotechnology, **M.A.** History, Pub. Administration, Maths., **M.Com. M.Ed.** (Special Education), P.G. Diploma in Electronic Science
6 July 95	**M.Sc.** Microbiology, Statistics, Applied Geology, Geography, **M.A.** in AIH, Music, *B.Lib. & Inf. Sc*
7 July 95	**M.Sc.** Atmospheric Science, **M.A.** Physical Edu , Philosophy, Hindi, **M.Tech.** Applied Geophysics, Educational Technology
8 July 95	**M.A** *Education, Linguistics,* **B.Ed.** *(Sp. Edu)*
9 July 95	**LL.B.** (Professional) 5 yrs. course LL.B. (Prof.) 3 years (Evening) and for Hisar and Sirsa seats.
10 July 95	**M.A** Sanskrit, Psychology, P.G. Dip. in Journalism, P.G. Dip. In Instrumentation

IMPORTANT INSTRUCTIONS

1. Hand book of information (HBI) containing all relevant information and Admission form will be available from the Manager, Printing & Publications, Kurukshetra University, Kurukshetra-132 119 from 30 May, 1995, Separate Handbooks have been prescribed for a) Courses at University Campus b) Courses at PG Regional Centre, Hisar and c) Department of Distance Education.

2. Information brochure for the **P.G. Regional Centre, Hisar** with be available from **12th May, 1995.**

3 Price of the HBI/information brochure at the counter is Rs 50/- and Rs 60/- by Registered Post by DD/IPO in favour of the Registrar, Kurukshetra University.

4 Separate Prospectuses have already been published for *MBA, MCA/DCA, MIB,* MTM, MA Social Work, MMT, MFC

5 Admission to all courses, *except if mentioned otherwise* with be made on the basis *of merit cum entrance test.*

6 Mention the name of the Course for which you need the HBI clearly in your request for the admission form.

* For minimum eligibility and other conditions please consult the relevant Handbook of Information/Prospectus/ Information Brochure.

** Admission Notice for these two courses have already been published separately and the Last date for the receipt of application is 19.6.95.

M.Sc. Maths/Physics/Stat/ Elects.

Last Date for receipt of application for courses at Kurukshetra University Campus and P.G. Regional Centre, Hisar is 23.6.95

REGISTRAR

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